

63
"Eat an Apple and Save a Biscuit"

---HERBERT HOOVER, U. S. FOOD ADMINISTRATOR

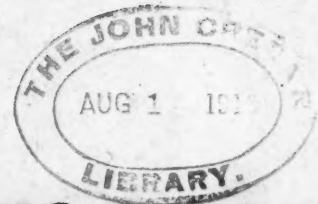
January, 1918

GREEN'S

5 Cents a Copy

American

FRUIT GROWER



Edited by Samuel Adams



The National Fruit Journal of America

THIS ISSUE IS 185,000 COPIES

Hidden Pests Easily Conquered with

FRUIT-FOG

It Brings Amazing Yields From Ordinary Trees!!

HAYES FRUIT-FOG GUN

(Fully Patented)

Big success where time and speed is the important factor. One man handles full capacity of power sprayer. Combines convenience and labor saving with the wonderful thoroughness of FRUIT-FOG, the superfine high pressure spray. One man does 4 days' work in 1. Simple twist shoots long spray to top of trees or wide spray for close work. Half turn opens wide or shuts tight. Made of high grade brass. Mechanically perfect. Fully guaranteed **\$12**

FRUIT-FOG is made from any standard solution by the high pressure of Hayes Fruit-Fog Sprayers.

Millions of dollars worth of fine fruit is destroyed annually by hidden pests and diseases. Some experts even claim that as much as 47% of the damage is done by those insects and diseases which infest the minute niches, cracks and crevices about the trees.

For years these dangerous hidden pests and diseases have laughed at your best efforts to reach them with coarse, heavy, low-pressure sprays. Thus they have caused a heavy loss even in supposedly thoroughly sprayed orchards.

The increased yields from Fruit-Fogged Trees is due to the fact that this superfine, fog-like, high pressure spray absolutely stamps out all hidden pests. By this treatment many ordinary trees have been known to produce amazing yields. FRUIT-FOG is made from any standard solution by the high pressure of

HAYES FRUIT-FOG SPRAYERS

FRUIT-FOG easily filters into the most minute crevices of bark—works under bud scales—beneath fleshy stamens of apple blossoms. It seeks out the hidden pests, penetrates into the innermost sections of the foliage—gets at the bottom of the leaves as well as the top.

FRUIT-FOG literally envelops everything—like the finest mist. It deposits a light film of solution—

Guaranteed!!

Hayes Power Sprayers are tested to 500 lbs., and are GUARANTEED to maintain 300 lbs. working pressure at their full rated capacity. These Sprayers are built for constant operation at high pressure and for enduring service. This requires not only thorough mechanical construction but finest materials and fittings. HAYES HAND SPRAYERS are built to give maximum pressure and capacity with minimum power to operate. The complete line contains more than

50 Styles

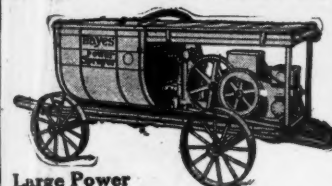
We manufacture large and small Hand and Power Sprayers for orchards, field crops, shade trees, hops, poultry, disinfecting, painting, whitewashing, farm, home and garden use. Complete outfits or separate spray pumps, hose, nozzles, fittings, bamboo rods, etc.

This SPRAYING MANUAL FREE!

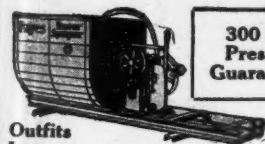
Tells all about spraying—how to spray; when to spray; what solution to use for different pests and diseases—and in different seasons. Now being used by thousands of growers and prominent agricultural colleges. We will mail you a copy free of charge, with our beautiful 68-page catalog on Hayes FRUIT-FOG Sprayers, upon receipt of the coupon. FRUIT-FOG and this Spraying guide are a big crop combination that can't be beaten. MAIL COUPON TODAY.

HAYES PUMP & PLANTER CO.
Specialists on Spraying and Spray Apparatus
Dept. P GALVA, ILLINOIS

A few
of our famous
FRUIT-FOG Sprayers



Large Power
Sprayers



300 Lbs.
Pressure
Guaranteed

Outfits
Less
Engine



Large
Hand
Sprayers

Barrel
Sprayers



Nozzles and
Fittings

Successful
Spraying

With a story of
FRUIT-FOG

MAIL

THIS COUPON

Hayes Pump & Planter Co.
Dept. P, Galva, Illinois

Gentlemen: Please send me Free Spraying Guide and complete catalog of Hayes Sprayers. I am interested in—

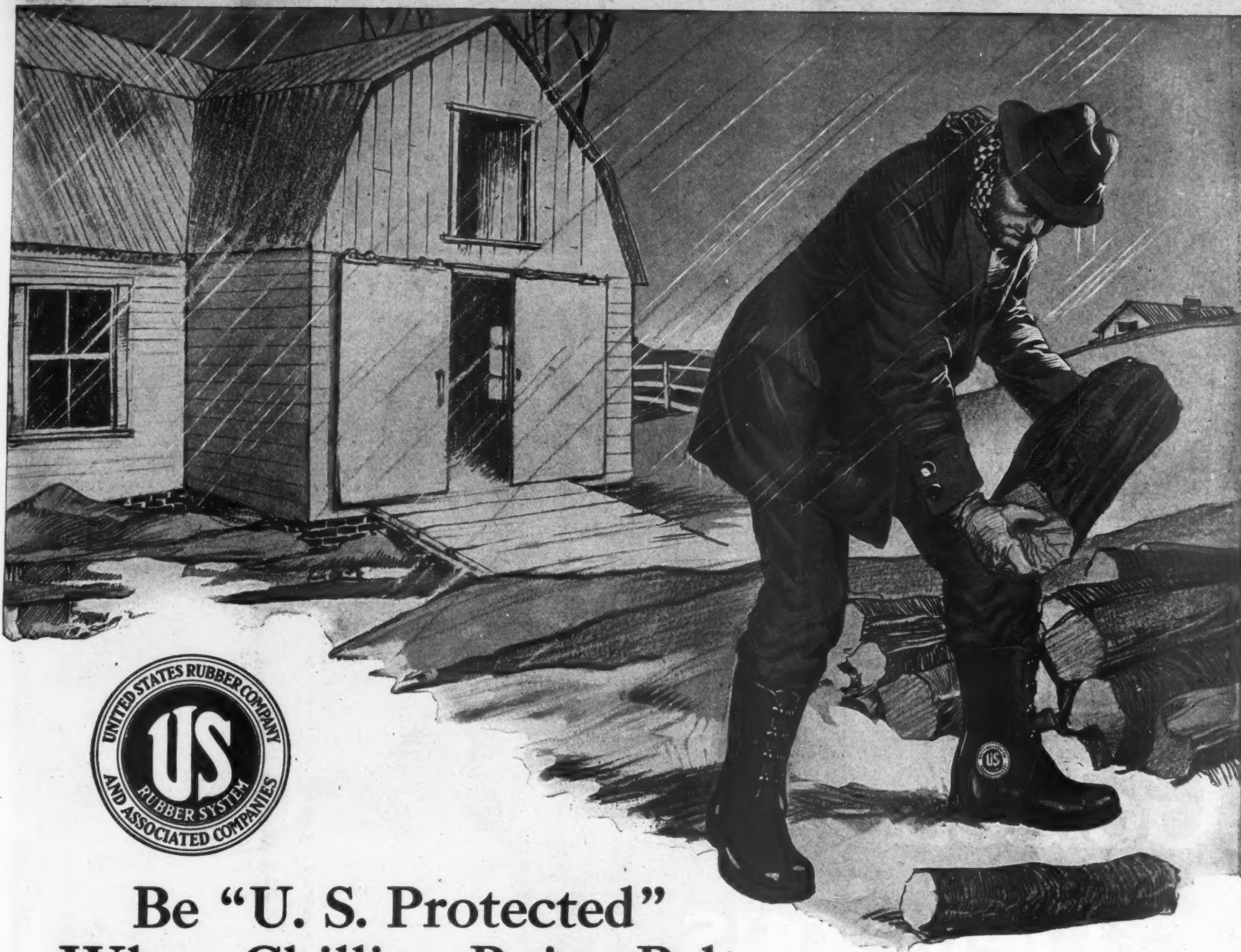
☐ Large Hand Sprayer ☐ Small Hand Sprayer
☐ Large Power Sprayer ☐ Small Power Sprayer
☐ Nozzle and Fittings

Name

Post Office

R. F. D. No. State

Street No.



Be "U. S. Protected" When Chilling Rains Pelt

Sloshing around in pneumonia-breeding weather, your feet need the rubber footwear that will keep them warm, dry and comfortable and keep you healthy.

U. S. Rubber Footwear


meets the situation—"U. S. Protection" is the all 'round comfort, long wear and economy which you are sure of in every pair of "U. S." Protection for your feet, your health and your pocketbook. Made for heavy service, double duty, reinforced where the wear is greatest, they are bound to give utmost satisfaction.

There are styles suited to every outdoor worker. Every pair carries the "U. S. Seal," the trade mark of the largest rubber manufacturer in the world. This seal is your protection. Look for it and be sure of it.

For sale everywhere. Your dealer has the style of U. S. Rubber Footwear to meet your needs, or can get it for you.

United States Rubber Company
New York

U. S. Rubber Footwear



Now Ready
For Your Orchard-

Golden Delicious

THE golden reward of a century's search. An epoch in fruit discovery. A fitting team-mate to Stark Delicious—leader of all red apples. Fruit authorities pronounce Golden Delicious "Queen of Yellow Apples"—superior to Grimes Golden. One of the most important productions of the Stark Nurseries, which for over a century has given the world its choicest fruits.

Write for Story and Picture

Its discovery reads like a romance. You will enjoy it and learn how to get Golden Delicious for your orchard. With it comes actual photographic reproduction (25 inch) of a loaded branch of Golden Delicious.

Gerardi, noted expert, declares, "It is the long-looked-for apple, in size, flavor, texture and shape. Keeps

until Spring and retains its delicious flavor. I foresee Golden Delicious first choice in our orchards."

Tested throughout America and proven exceptionally hardy. Trees obtainable only from Stark Bro's, Louisiana, Mo. Write today. See address blank below.

Above
photo of
bearing
Golden
Delicious was
taken only 18
months after graft
was inserted.



Stark Bro's Nurseries
101 Years at
LOUISIANA-MO.



Note—Address Dept. 41 Send your name and address to Stark Bro's, Louisiana, Mo., for complete story of discovery of Golden Delicious—beautiful life size (25 inch) photo print of loaded branch of Golden Delicious—and copy of New Big Stark Fruit Book showing leading fruits by photographic reproduction in natural colors.

Name _____ Street or R. R. No. _____ City _____ State _____

ve
o of
ing
en
was
y 18
raft

) photo
ul colors.

That
steadfast
they must
courage
home.
safely d
in volun
resultant
good hea
brave he
stantly r
fellow o
have ap
put on
trenches
races an
want th
great an
stand be
or carry
for amm
virtually
must be
rigorous
ing life

Most
ply, and
and as a
every ne
achs of
rope, ev
maintain
patriotis
the hear
the the
from his
livelihood
we owe
supply
or cond
on him.

A little
alarm v
commen
tion of
substanc
recomm
yard pla
hamlet
ifornia,
pigs we
tened; 1
and rye
made up
in Euro
In spite
tion dur
every
scarce a

If con
dividual
and tha
and ent
very ric
chase of
for the
himself
see that
one, and
either p
pare our
ending
labor, a
wage ea
tsified w
purchase
and fam
where su

It will
for us to
the serie
crease t
tial to t
ence. I
this wit
lions of
gin ferti

Green's American Fruit Grower

A MONTHLY MAGAZINE DEVOTED TO FRUIT GROWING AND MARKETING

Vol. XXXVIII

JANUARY, 1918

No. 1

Fruit Will Help to Win the War

E. S. SMITH, OHIO

That the American soldiers may stand steadfast on the European battle line, they must be sustained with food and encouragement from the folks here at home. The food we produce, spare and safely deliver to them must be sufficient in volume and of proper kind, that the resultant ration be one that makes for good health, red blood, strong arms and brave hearts, in such a plenty that constantly reminds them that loving friends, fellow citizens and a grateful country have appreciation for those who have put on the khaki and gone to the trenches to make the world safe for races and nations that love liberty and want the blessings of democracy. Our great army of producers here at home stand behind the men who stand behind or carry the gun. While the gun calls for ammunition of the best quality in virtually unlimited quantities, the back must be well clothed to withstand the rigorous winter atmosphere and the trying life of a soldier.

Food Indispensable

Most important of all is the food supply, and our obligation as individuals and as a nation is to supply and gratify every necessity and desire of the stomachs of the boys we send to war in Europe, even though there be nothing remaining here for us to eat. Let real patriotism and a broad generosity seize the heart of every American and accept the theory that when we take a man from his home and his usual means of livelihood and ask him to fight for us, we owe to him and must abundantly supply him as well as those of an age or condition that are really dependent on him.

A little more than a year ago, the alarm was sounded and the agitation commenced for the increase in production of every kind of cereal and animal substance for food. War gardens were recommended and popularized; back yard plantings were encountered in every hamlet and city from Maine to California, and from Minnesota to Florida; pigs were purchased, nursed and fattened; increased acreage of corn, wheat and rye was sown, and the heavy demand made upon us for export to "our boys" in Europe and their comrades-in-arms. In spite of the unusual large production during the season of 1917, we find every item of food-stuffs relatively scarce and awfully high in price.

If consideration is given to the individual enjoying but ordinary wages and that he goes to the same market and enters into competition with the very richest of our citizens for the purchase of this scarce and high-priced food for the supply of the necessities of himself and family, you must clearly see that the race is a hard and unequal one, and that we, as a nation, must either produce more foodstuffs or prepare ourselves for a gradual and never ending rise in the price of all kinds of labor, and keeping in mind that the wage earner will never be wholly satisfied when the wage is insufficient to purchase life's necessities for himself and family, when he enters the places where such things are for sale.

It will readily be seen that the course for us to pursue is to engage ourselves in the serious study of plans to further increase the production of things essential to the continuance of human existence. If we confess our inability to do this with our wide and countless millions of acres of soil of comparative virgin fertility, when our population is but

a hundred million, what will we do or where will we go when it has reached two hundred million or even a billion, with greater density per square mile than Belgium, China or Japan ever knew?

We could reform our method through the reclamation of our wasted, unsightly, rural roadsides that annually serve no further purpose than the propagation of thousands of tons of noxious weed seeds for the tillers of the adjacent cultivated fields to battle, and the hundreds of billions of crop-destroying insects that find breeding places and living quarters in these publicly maintained strips of weeds and grubs. We could lessen effort, conserve our man power, improve the quality and give immeasurable en-

ing place for the children and the resting place for its owner when the summer shadows fall across the beaten soil beneath it.

Everywhere you drive or go by train, into whatever section these lonely, neglected, blooming and unproductive fruit trees dot the landscape, stately, old and grand, they are waiting for you to point the way and do something for them that they may convert each blossom into fruit and have their branches hold out to your reach the material that will sustain us and preserve our health while we fight and win the greatest battles of human history. All this fruit right where it is needed, within the carrying distance of the pantries and storage cellars of American homes,

THAN A BILLION BUSHELS OF FRUIT.

Do these five things, the task is completed and the above mentioned wonderful results achieved:

(1) Measure the tree's diameter in inches and go that distance in feet from it and encircle it with a trench 20 inches deep for drainage and breaking up the refractory sub-soil. Fill the bottom of the trench with old boards, sticks, brush, bones, old cans, straw or fodder and cover with earth.

(2) Carefully and thoroughly prune the tree of water sprouts and such other surplus branches so as to balance the top and permit the air to circulate freely through the branches. Be sure to remove all dead branches and scrape the rough bark from the tree behind which insects may be hiding for the winter.

(3) Spray the tree during winter or early spring with some material for the destruction of whatever scale may be lurking there to feed on the tree or its fruit. When bloom comes, give it an other spray to destroy whatever moth eggs may be deposited in the bloom. When the bloom has fallen, give another spray on the small fruit so that all of it will grow to maturity and be of perfect quality and wormless.

(4) Cover all that soil inside the circle and about the tree with about a four-inch depth of coarse manure, straw or fodder. Do this while the soil is frozen so that the early or premature thawing will be prevented, and cause the bloom to be later so that danger of late or killing frosts will be past. The purpose of this mulch is to help control the season of bloom. Permit all this mulch to remain where you place it and decay there for the constant fertilization of the tree so it can keep up a steady growth and mature such fruit as sets on it.

(5) Scatter broadcast upon the mulch mentioned in No. 4 from one-half to four pounds of nitrate of soda (salt peter) to each tree according to its size, so that this material may leach through the mulch during the winter and early spring and as it washes away to enter the trench of loose earth and give immediate fertilization to the feeder roots of the tree.

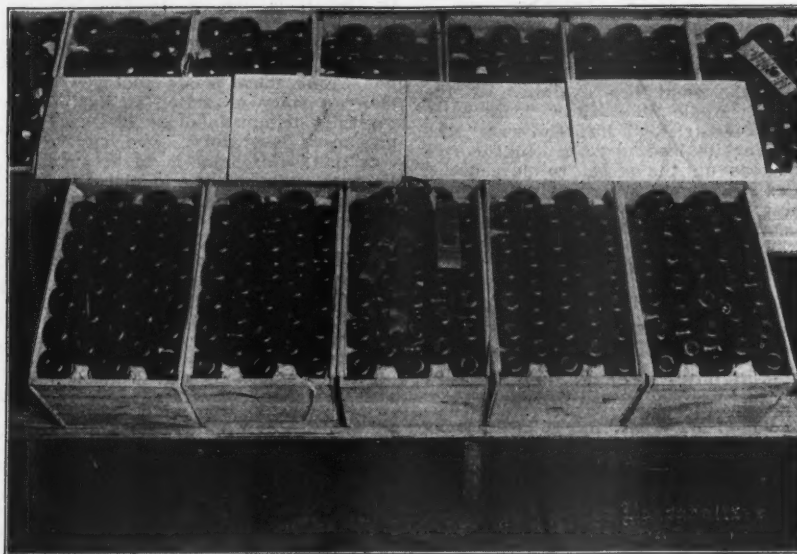
Large Orchards

Where orchards of great numbers of trees are to be treated, it will be advantageous to plow or dig trenches clear through the orchard midway between the rows of trees and then between the rows in the other direction so as to give thorough drainage to the life roots of all the trees and to assure the fertilizers applied going direct to the roots for the immediate benefit of the tree.

Every tree and orchard in our country is worthy of and entitled to the treatment set out, annually if we may reasonably expect our fruit trees to give us the maximum production. Their annual cropping demands this just as positively as does the annual spraying of the tobacco fields where is produced something not comparable with fruit as one of life's indispensable necessities.

The owners of fruit trees in whatever section of our country can get further details of this treatment by making request for same of any State Food Administrator, any State Agricultural Department, or the U. S. Department of Agriculture, Washington, D. C.

Any nurseryman will be glad to render you this service, upon your request



Prize Winners at Indiana Apple Show

largement to the production of cereals on our farms were we to adopt this reform.

Where Is the Remedy?

Let us answer. In every orchard, lawn, alley way and abandoned homestead in every township, of every county and state of the Nation, we find scores of millions of fruit trees of mature age and producing size that bloom abundantly each year, and yet fail to produce any fruit. Standing there like sleeping soldiers, waiting for us to mobilize them into America's hope and bid them yield for us in 1918 AN EXTRA BILLION BUSHELS OF FRUIT.

Results to Be Secured

That wonderful result is to be had from fruit trees already matured, and not included in the commercial fruit orchards of the country. We mean the barren, partially unproductive trees that have been neglected through the past score of years and have been grumbled at because they have given their annual bloom promise but never their fruit realization. Probably you have a few of such trees on your lawn or in your orchard, your neighbor has some of them that have lived lives of neglect while the rabbits gnawed their trunks in winter and the horses and cows through the summer. The trees have been the rubbing post of the swine, the resting and stamping place for the cows, the swinging

place for the children and the resting place for its owner when the summer shadows fall across the beaten soil beneath it.

With this bountiful fruit supply within the purchasing power of our most humble citizens, we will feel ourselves more able and better encouraged to spare still more of our fats and other highly concentrated foods like corn, wheat and meat for those at the battle front. This fruit will not only tone our digestion to good health and round out every curve of the stomach, but will give us iron and salts for the blood, and give us the calories of energy that will enable us to endure every strain and pressure placed upon us while we struggle to thrust aside the shadow of brute dominance that threatens us from across the Atlantic, and keep away the death-haunt of food scarcity and possible famine that clouds the smiles and interrupts the slumbers of every American.

FOOD IS A POSITIVE NECESSITY, NOT A THEORY. We must win the war against Germany, and the food supply is the most vital factor in that struggle. The only great and untouched source of its supply and upon which we will have to lean is MORE THAN A HUNDRED MILLION IDLE FRUIT TREES.

You have all the materials at hand. A little effort and small expense, you are depended upon to assist in making them produce for us during 1918 MORE

L634.051
F512

430404
200969

so that success will come to you for every motion of effort you make and every cent you expend in that direction. Have your favorite agricultural or home paper direct a study and discussion of the most economical measures to be adopted for your particular section and the variety of fruit specialized in that section.

Nurserymen Endorse Plan

Some days ago, the nurserymen of the North Central and Mississippi Valley States, in session at Des Moines, Ia., passed the following resolution which is self-explanatory and evidences their patriotic interest in country and their willingness to make every tree coming from their nurseries in the past, fully productive and contributory to the country's welfare:

Whereas, The successful prosecution of the war in which our country is engaged will overtax our normal food production, if we are to supply our people at home and our allies abroad, and

Whereas, Throughout every State and section of the nation there are scores of millions of fruit trees of mature and bearing size and age that would bring within the reach and purchasing power of the most humble of our citizens, hundreds of millions of bushels of fruit in excess of the normal production during the season of 1918, without the entailment of great expense or the encumbering of our already crowded transportation facilities, therefore

Be It Resolved, That they tender their services gratuitously to the owners of fruit trees everywhere in the matter of instruction for the immediate rejuvenation of barren and partially unproductive trees to make them fully productive. They request nurserymen everywhere to render this patriotic service whenever and wherever possible, to increase the production of fruit as food from present orchards for the winning of America's war. We respectfully suggest that the National and State Food Administrators include in all their propaganda for increased food production, this agitation and admonition to spray, prune, cultivate, fertilize and otherwise so handle as to bring into full and immediate production all orchards and fruit trees of whatever kind or wherever located. We respectfully suggest that this resolution be given wide and general dissemination by all Food Administrators, publications and other interests working for the winning of the war.

(Signed)

COMMITTEE ON RESOLUTIONS.

E. S. Smith, Troy, Ohio.
F. J. Wright, Des Moines, Iowa.
Prof. S. A. Beach, Ames, Iowa.
H. L. Merkle, Des Moines, Iowa.

Every county, township and school center should be thoroughly organized and all fruit trees given that careful, needed and proper attention so that the greatest possibilities can be realized from them before another long winter comes upon us.

The assurance can be given that every American on the firing line will do his share of the fighting whenever and wherever the command is given, and it is left to us as a solemn and patriotic duty to do anything and everything possible to first feed the fighters and have a surplus for our own life needs here, if we are to win the war and perpetuate the government founded by our Fathers.

Help the fruit tree do its work and it will solve our food problem for us. Without plenty of food we can neither fight, win or live.

HAVE EVERY AMERICAN FRUIT TREE DO ITS FULL DUTY.

APPLES IN BARREL FACE

If you are packing 3½ in. apples, the face will take 19 apples—two circles and one in the middle. Two circles with three in the center, or 27 apples, will be needed for 3 in. fruit. For 2¾ in. fruit, 30 apples in two circles with four in the center, and for 2½ in. apples three circles with one in the center will be needed.

Fruit Growing by Motion Pictures

Ernest A. Dench, Author of "Advertising by Motion Pictures"

Who has not enjoyed taking in the movies during a trip to town? You may consider the motion-picture an excellent form of entertainment, but when it comes to consider the motion-picture seriously both as an advertising and educational medium, there will probably be a tendency on your part to ridicule the suggestion. There are, however, fruit growers who have proven once and for all that the motion-picture can be profitably employed in connection with fruit growing.

Some of the Films

About two years ago the Yakima Valley Fruit Growers Association, of North Yakima, Washington, had a four-reel film prepared. The Association by the time this is in print expects to use their motion-picture as part of their apple selling campaign. Various circumstances have prevented them from so doing before this late date. However, the film was loaned to the United States Reclamation Service for the purpose of accompanying some lectures which they gave.

Those present at a comparatively recent meeting of the International Apple Shippers Association, held in Chicago, saw a one-reel picture exhibited by Senator H. M. Dunlop, an apple grower in a large way of business. The film showed his large orchards and how they are cared for.

Rather unusual in character was the apple motion-picture exhibited at the Indiana Apple Show three years back. The "industrial" had Governor Ralston for its leading man. In the reel he stops on the street to purchase a ripe, rosy apple such as Indiana produces. The fruit vender offers him a western-grown apple, but the Governor, after refusing to accept substitutes, obtains the desired fruit.

How They Advertise

The motion picture, appealing as it does to the eye, is the most efficient teacher in existence. This the Bureau of Commercial Economics has realized in establishing a motion picture library. Its list of fruit growing subjects is by no means complete, though it includes oranges, apple, almond and olive.

The apple picture covers the seed, budding, grafting, cultivating the ground, pruning, harvesting, storage, wrapping and barreling, followed by the uses: Food, cooking, raw, cider, vinegar, dried or evaporated, brandy, apple jack and apple butter.

In the orange production you see the preparation of the ground, planting of the seed, grafting, cultivation, irrigation, spraying of trees to protect them from frost and to prevent scale, harvesting of crop, sorting, wrapping, packing and shipment. The reel concludes with the principal uses—medicinal, marmalade, perfume, essential oils and candy.

The almond reel opens with typical trees in full growth. It points out that the white flower tree grows bitter almonds, while the pink flower variety produces sweet almonds. In the harvesting incidents the nut is shown first in its paper shell and then ordinary. The uses found for the sweet almond are as follows: food, medicine, oil, olive oil, medicinal (internal), flour. Here are the bitter almond uses: Emulsion, glucose, prussic acid, essential oil, oil, olive oil (instead of), flavor and manufacturing of dyes.

In the olive subject you are shown the propagation, cutting, layers, seeds, grafting, cultivation, irrigation, pruning, harvesting by hand and beating in poles. The fruit is picked green, placed in lye wash and water wash and then bottled. From the olive we get olive oil, leaves and bark medicinal, wood in cabinet making, gum and perfume.

Films are Loaned

The Bureau of Commercial Economics, Washington, D. C., is prepared to loan any of their films through the various co-operating universities to any organi-

zation requiring the use of them. No charge is made for the service except the transportation charges from and to the distributing center. It is a condition that the films be shown on standard motion picture projectors and manipulated by an experienced operator. The Bureau expects a report of the films shown and the number of spectators present. The Bureau further stipulates that no admission fees whatever be charged.

Edit Your Film

To produce a good fruit growing motion picture means much more than merely to arrange for a series of explanatory photographs. The first step is to get in touch with a reputable motion picture producer. I repeat reputable because there are some none too scrupulous, who make it a regular practice to charge for superfluous footage, which is designated as padding in the motion picture industry. The extra cost of same is nothing compared with the harm it does to your film, the success of which depends on snappy action. If it is unduly drawn out, the spectators are liable to lose interest.

I have seen efforts along these lines that contained material for a one-reel subject, yet they were unduly extended to two reels, boring an audience for thirty minutes instead of entertaining it for fifteen minutes. But even the cleverest motion-picture producer cannot avoid some waste footage. Like many a story or article, it has to be carefully trimmed before it leaves the producer's laboratory. One way to detect this beforehand is to arrange for its projection and try to place yourself in the position of the spectator.

Since everything is absorbed by the eye, a whole mass of explanatory matter tagged onto the film would rather hinder the advertisement instead of adding further enlightenment, as is intended. For this reason, the fewer and shorter the sub-titles are, the better the picture will be. There are plenty of other mediums in which to display how well you can weave words, so why drag them into a place where they do not fit? Besides, it is what the spectator sees, not reads, that leaves the lasting impression, which is the paramount point to be reached in advertising by motion pictures. Where the film excels is that it comes on the screen without competing with others for attention.

How It Is Done

Your best plan would be to have the representative of a reputable industrial motion picture producer, or a local cinematographer who knows his business, call at your fruit farm. You can then tell him what phases of fruit growing you desire covered and the points to be emphasized. He will then draft out a scenario, in which he will allow one or more scenes for each detail, according to the area it covers. If it is only a minor detail, he will perhaps plan to "shoot" a five-feet "flash," but to cover an important process he may run up to fifty-feet for a single scene. A scene, by the way, is a portion of action which can be taken without it being necessary to move the camera. He then has to allow for sub-titles, for each detail must be explained in to-the-point language. Each word used consumes one foot of film.

Counting the Cost

A competent camera man figures his time at from ten to twenty dollars a day, and somebody must pay for that time even if weather conditions should delay the work of production. The producer will probably make an allowance for this in his estimate.

Lighting conditions within your packing and storing rooms may be unsuitable for photographic purposes, and the producer will have to figure on installing a portable lighting outfit for the work. A charge of fifty cents a film foot will be charged for the scenes in which it is used.

The cost of the average industrial motion picture is in the neighborhood of fifty cents a foot, or five hundred dollars in the case of a one-reel production. This is only for producing and developing the negative, ten cents a foot being charged for the positive copy.

Getting Circulation

Every advertiser likes to have his reel circulated through the Bureau of Commercial Economics because of the extensive circulation given them by colleges, technical and agricultural schools, public libraries, missions, state armories, high schools, people's institutes, settlement houses, chambers of commerce and so forth. Seldom does the advertiser realize that the industrial producer is up against a censorship board.

Before the Bureau will accept a motion picture for distribution, they must be convinced that the employees are shown due consideration; in the case of children, the conditions must not be unwholesome. If it is a food product, the pure food laws must be strictly complied with, and no injurious chemicals or drugs used in its manufacture.

The cinematographer also has to taboo the actual killing of any domestic animal in his demonstration. When these conditions have been complied with the producer has to be careful not to insert anything misleading or untruthful in any form. The producer cannot touch intoxicant liquor or tobacco from an advertising standpoint; he is confined to showing tobacco growing as one of the nation's industries.

On the occasion of an "Apple Sunday" inaugurated by the Grace Episcopal Church, of West One Hundred and Fourth Street, New York, one of the justly famous "Skookum" apples was presented to every member of the congregation. Further advertising was secured by the "Skookum" people since their reel showing the growing of their apples formed part of the church's motion picture program.

Who Sees the Reels

Supposing you have a one-reel industrial produced. The negative, we will say, costs \$500, with \$100 additional for every print. If you intend having your film shown simultaneously at a number of theaters and halls, it means that you will have to supply one print for every theater. As the picture will only be retained for several days, it is extremely doubtful whether the expense will be justified, so it is best to utilize but one print over a given territory. The life of a print depends on the care taken by the operator—it may only last three weeks in servicable condition, or it may be in excellent shape after six months of wear and tear.

Allowing an average audience of 1,000 at each of the two evening performances while the print takes six months to go the rounds of the theaters, the reel will have been seen by 312,000 people. There is more in these figures than appears on the surface, for although a publication may guarantee such a circulation, you have to allow for those readers who skip the advertisements. In the motion picture theater this cannot be done, as only one thing can be shown on the screen at a time, and in the darkened hall a spectator cannot turn his attention elsewhere.

ORCHARD THERMOMETERS

The fruit crop often depends on accuracy of thermometers which indicate when frost pots should be lighted. Dr. M. J. Sweeney of San Bernardino county, Cal., is one who tests all seven of his, together, every fall before putting them out. They may be compared with a thermometer of known accuracy, or packed in chipped ice to see if they register correctly. If incorrect, allowance can usually be made with no serious error.

SPRAYING REVOLUTIONIZED BY A NEW SYSTEM

THIS ADVERTISEMENT AUG. 15th 1916
APPEARED IN THE FRUIT GROWER

"FRIEND" WAS FIRST AND SPENT THOUSANDS OF DOLLARS TO DEVELOP AND PLACE IT ON THE MARKET.

EVIDENCE of "FRIEND" priority in this new system is found in these FRUIT GROWER advertisements and the thousands of "FRIEND" spray guns used in 1916 and 1917.

TOWERS and SPRAY POLES had annoyed Horticulture long enough so "FRIEND" invented the

SPRAY GUN

A small, light device that one man could hold and distribute the entire capacity of the largest power sprayer alone—with ease, **FASTER** and **BETTER** than two men with towers and long poles and so constructed that it could be used equally well on all power sprayers.

The gun was soon characterized

SPRAY GUN
 nuSYSTEM™

and the system or method called

ARE YOU A GROWER?

Then you want the best there is; when you buy a sprayer or a spray-gun, you want it for business; you want the kind that always makes you feel that you made the right choice.

ARE YOU A DEALER?

Then you want the line that will enable you to LOOK YOUR CUSTOMER SQUARE IN THE EYE when you talk "spray-gun" to him. If you are not a "FRIEND" dealer, you should APPLY NOW.

THIS HAS PROVEN TO BE THE WORLD'S GREATEST HORTICULTURAL ACHIEVEMENT AND THE "FRIEND" LINE IS A LIVE WIRE, BUSINESS-GETTING PROPOSITION.

THE "FRIEND"
 sprAgun:

Light weight, quick action, durability and simplicity—are the chief features of the gun. Light enough to be held in one hand; quick action for any kind of spray desired; durable, by special materials and ingenious design; simple in construction, only one working part. All who used the "FRIEND" gun say that it not only saved 25% of spray solution, but did much faster and better work—owing to the great projectiveness of fine spray; some prominent growers have said that they would not take \$1,000 for their "FRIEND" sprAgun.

Don't spray again without a "FRIEND" gun; there will be many substitutes but only one "FRIEND."

Testimonial:

"I will take any power sprayer that will maintain 200 lbs. pressure and with one line of hose and the 'Friend' gun, will do more work and a better job during the day than three men can do with the old system."—Grand Rapids, Mich.



A "FRIEND" nuSYSTEM AT WORK WITH THE "FRIEND" GUN

THE "FRIEND"
 POWERSPRAYER:

When you own a "FRIEND" Power Sprayer you will talk like all the other owners. They say "it's a wonder; so handy; so convenient to work around, goes anywhere, doesn't upset, draws easily, so powerful, so well designed, every part built for its place and, best of all, puts the spray where I want it, etc."

These wonderful sprayers are now built in three sizes—small, medium and large. Our Service Department will help you decide which to buy. DO NOT WAIT. This season's output is going fast. You will find the "FRIEND" a TRUE FRIEND and a MONEY-MAKER.

Testimonial:

"Our nuSYSTEM power sprayer has proved to have twice the capacity of any other sprayer we have ever used. We are ordering one more and with these two nuSYSTEM rigs and four men we will do the work formerly requiring four rigs and twelve men."—Waterville, Ohio.

The "FRIEND" MANUFACTURING COMPANY has a reputation for square and honest dealing and has chosen its representatives with the greatest possible care. "FRIEND" products are made only by THE "FRIEND" MANUFACTURING COMPANY and can be obtained only from its authorized representatives. Catalog now ready. This remarkable "FRIEND" service is now close at hand and may be found at the following fruit centers: Fill out the coupon and mail today to your nearest "FRIEND" distributor.

For all western states:

The California Rex Spray Co., Benicia, California. The Wenatchee Rex Spray Co., Wenatchee, Washington.
 The Medford Rex Spray Co., Medford, Oregon. The Rex Company, Omaha, Nebraska.
 The Yakima Rex Spray Co., North Yakima, Washington. The Toledo Rex Spray Co., Toledo, Ohio.

For Canada—The Canada Rex Spray Co., Ltd., Brighton, Ontario. All east, south and foreign—THE "FRIEND" CO. Local representatives are being appointed in all sections. With this peerless organization to carry "FRIEND" blessings to the fruit growers everywhere, all Horticulture will rejoice.

"FRIEND" MANUFACTURING COMPANY, GASPORT, NEW YORK, U.S.A.



I am in the market for power sprayer, large medium
 small sprAgun

I have acres of fruit, mostly

Name

Address
 GAF 118

Niagara Dusters



In 40-year-old orchard. Capacity 40 acres a day

Niagara Dusters Save Labor, Time and Material, and Insure Better Fruit

they combine efficiency with simplicity, durability and lightness of weight—operated by any three horsepower engine. They apply the dust so rapidly that frequent applications can be made over large acreage at critical times.

DUST APPLES, PEACHES, CHERRIES, PLUMS, Etc. 1917 DEVELOPMENTS IN MATERIAL

For APPLES—A Niagara mixture has been developed which will control fungus diseases (apple scab), chewing insects (leaf roller and codling moth), sucking insects (aphis and red bugs).

For PEACHES—Niagara Peach Mixture has been developed to control Brown Rot, Peach Scab and Curculio without damage to the foliage, and late applications have been found to produce marked improvement in color as well as keeping qualities.

THIS IS IMPORTANT TO YOU THIS YEAR

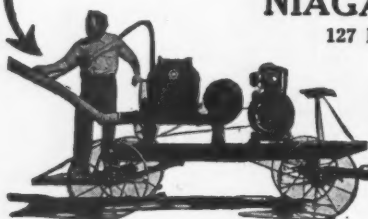
Every user of Niagara Dusting Machines is assured a supply of Niagara Dust Mixture. We have purchased enough raw material in advance to supply you.

WRITE FOR Free Book on Dusting

which describes our various hand and power models. Tell us the size of your orchard, and the kind of fruit. Let us show you how to make your orchard pay better.

NIAGARA SPRAYER CO.

127 Main St., Middleport, N. Y.



Model D-1

Shown complete in every detail (no extras—Niagara Dusters are shipped ready to run). This is the largest size duster and requires a 3-horsepower gas engine shown here mounted on special wagon adapted for apple orchard work. Also shipped on skids with or without engine (New Way air-cooled).

Turn Cutlery Steel Into Your Fields!

Do It Early With **Cutaway** DISK HARROWS

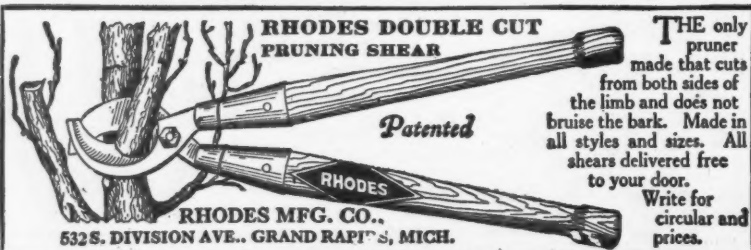
That's what the disks are made of—a special cutlery steel—forged edge (cut out or solid)—so sharp and sturdy that mother earth crumbles into tiny particles just as you want her to. Pulverize the soil early this Spring. Get it in the best condition to give the world bigger and better crops—and make it a poor season for Lady Insect and her family.



WRITE FOR THIS BOOK

It's a valuable one to have; tells what you need to know about "The Soil and its Tillage". With it, we will gladly send our complete Implement Catalog and names of your nearest dealers in CUTAWAY (CLARK) Implements.

The Cutaway Harrow Company
409 Main Street, Higganum, Connecticut
Maker of the original CLARK Disk Harrows and Plows.



RHODES DOUBLE CUT PRUNING SHEAR

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door. Write for circular and prices.

RHODES MFG. CO.,
532 S. DIVISION AVE., GRAND RAPIDS, MICH.

Write for Book Today

FARM WAGONS



High or low wheels—steel or wood—wide or narrow tires. Steel or wood wheels to fit any running gear. Wagon parts of all kinds. Write today for free catalog illustrated in colors.

ELECTRIC WHEEL CO., 80 Elm Street, Quincy, Ill.

Kindly Mention American Fruit Grower when writing to Advertisers

TREE BRACES

AMERICAN FRUIT GROWER:

In your November issue, page fourteen, I notice you have an article referring to an inquiry about the tree brace.

I have often wondered why fruit magazines in general ding-donged on the same old songs about pruning and did not take up such an interesting subject as tree bracing. It seems to me this is a highly important and economic question that will bear discussion, especially by men having commercial bearing orchards. Surely any method that will relieve fruit men from gathering thousands of poles to be placed under limbs of trees and then removed in the fall of the year would be welcomed. A few years ago the *Saturday Evening Post* printed an article on fruit growing by the Dalmatians of California, in which special mention was made of the tree brace.

F. P. WHICHER, Iowa.

We have written to Mr. Whicher that we would appreciate any information he can give on this important subject. Those of our readers who have experience in this line will be doing fruit growers a service by communicating their knowledge to us. EDITOR.

EVERBEARING STRAWBERRIES

AMERICAN FRUIT GROWER:

I did not see anything about the ever-bearing strawberry, so I am just sending a word or so. I fought shy of them until last spring, when I set out about 1,800, but the plants were shipped from New York State and in poor condition, and as it was dry and windy at that time I only saved 600. But they got going after awhile, and berries! Well, I have raised small fruit for the last eighteen years, but never saw such plants to blossom.

The plants are loaded with blossoms and fruit today, October 19th. We have been having lots of rain, so not very many are ripe. I keep about one and one-half acres of the standard strawberry going all the time, but as soon as possible will keep only the ever-bearing kinds, as they produce double the fruit and make nearly as many plants as the old kinds. I am a cheese maker by trade, but a fruit grower and trucker by choice.

N. B. FISHER, Michigan.

A LOVER OF NATURE

AMERICAN FRUIT GROWER:

It is the law and love of God that plants in our hearts the beautiful flower of generosity. Think of the pleasure derived from just one beautiful tree, one beautiful bush or plant. I want no better epitaph than this when I take my journey hence: "She tried to make the little world in which she lived as bright and useful as she could with trees and plants and flowers. Not alone for herself, but for everyone whom it might benefit."

Since we bought this little place of 40 acres, one and a half years ago, we have bought and planted 16 fruit trees, 1,000 black cap raspberry plants, 4,000 annual and progressive strawberry plants, 2 dozen rhubarb plants, 2 dozen grape-vines, and have ordered 100 more vines. I am nearing the half-century mark and am far from being a rich woman, but my love for planting knows no bounds.

I find a number of persons near me who are trying to imitate my example. They may not grow rich from this but I feel sure they will grow happier and healthier. I have now added a few hives of bees to this collection. I have enrolled myself for two courses at the Ohio State University, also for one course from a commercial school on scientific salesmanship.

I do all my own work for a family of five and I help outside wherever I am needed. I have little time to feel my age or the results of my work. I just "keep on doing" and leave the final clearance sale in the hands of God.

Mrs. D. J. —, Ohio.

Riches are relative. If our neighbor goes without meat we don't have to order from our butcher to "save our face." We feel more comfortable on less meat, have a lot less rheumatism, and glow with the pride of patriotism.

\$50 wheat from \$40 land!



W. C. McGhee,

Clay County, Ark., made \$50 per acre net this last season on land that cost \$40 per acre a few years ago. He got \$1,717 from 35 acres of wheat (\$50 per acre). This wheat furnished a nurse crop for clover, timothy, etc.; which supplied at least \$600 worth of pasture feeding to 75 hogs and two carloads of steers. With a total income of \$65 per acre and only about \$15 per acre expense, Mr. McGhee actually made \$50 per acre net—more than he paid for his land. Land costs so little even yet along the

Cotton Belt Route in Arkansas and Texas

and brings such big yields that paying for a farm in one season is quite common. As Andrew Sulist, of Clawson, Texas, says, when asked what his land was worth: "Why it's worth \$75 to \$100 per acre, if you figure what it clears me in a year; but its worth only \$12 per acre really, because you can buy just such good land across the road for that sum."

Two books FREE

Now of all times you ought to look into the land and farm bargains in the Southwest—crop incomes there are away up, yet land values are still very low. Get our free illustrated books giving full facts and pictures of farms—prepared by a practical farmer who traveled all through that territory and tells you what he found out. Write today to

E. W. LaBeaume, Gen'l Pass. Agt.
1823 Railway Exchange Bldg., St. Louis, Mo.

Save Money! These Are War Times

Cut down your tire bills. Put on DOUBLE TREAD tires today—you can save 50% on your tire bills.

DOUBLE TREADS are strong, serviceable, good looking tires of double thickness and special construction insuring splendid wearing qualities. We build them for tough, hard work. Since 1914 we have sold car-loads of our tires to automobilists in every corner of the United States and Canada and today many of our first purchasers are sending us their seventh and eighth consecutive order.

DOUBLE TREADS give you substantial service at lowest cost. Let us send you one tire to prove our case. Compare these prices, then send us your order today—ask for full list. Our business has been built on the good will and satisfaction created by first orders.

Size Plain Non-Skid Tubes
30x3.....\$5.50 \$5.75 \$2.75 \$3.00
30x3½.....6.50 7.25 3.00 3.40
32x3½.....7.50 8.25 3.45 3.55
33x4.....9.50 10.50 4.50 4.75

Also all sizes up to 38x5½. State whether clincher, "Q. D." or straight side.

Address Dept. G. A.
THE DOUBLE TREAD TIRE CO., Inc.
106 West 52nd Street, New York City



Ditches Terraces

Grade roads, build dikes, levees with **Marlin** Ditcher and Grader. Works in any soil. Makes V-shaped ditch or cleans ditches up to four feet deep. All steel. Reversible. Adjustable. Write for free book and our proposition. Owensboro Ditcher & Grader Co., Inc. Box 245 Owensboro, Ky.

10 Days Free Trial

Kindly Mention American Fruit Grower when writing to Advertisers

Seventh Annual Indiana Apple Show

FRANK I. ODELL, INDIANA

Indiana has declared emphatically that she is an apple state. She feels that she has proved this seven times in seven years. The seventh proof was submitted in the Seventh Annual Indiana Apple show, held this year at Washington, Ind., Nov. 21-27.

Better apples do not grow than those which were displayed there in plates, trays, boxes, five box collections, barrels and in individual orchard displays. Said William P. Stark: "I am amazed at the perfection of these apples. I expected to find your fruit lacking at least in color, if not in quality, but you may say from me that I have never before seen such highly colored apples even in the Pacific Northwest."

All the varieties which grow to advantage in the middle west were seen there in their perfection. There were two car loads of them, representing sixty varieties shown by forty exhibitors from twenty-two different counties of the state. Most of the apples were Grimes, Jonathan, Winesap, Rome and Delicious.

Eight entries were made in the commercial orchard class which called for 40 bushels or more of commercial varieties packed both in boxes and in barrels. This class was thrown open to entries from Illinois and Kentucky. Dozens of growers from both states attended the show, several of whom represented two hundred acres or more of orchard. None took the dare and entered the class. Competition was so keen that the judges, Prof. C. I. Lewis of Oregon and Prof. W. H. Alderman of West Virginia, required 14 hours work with the first six exhibits in order to determine the prize winners.

Less than three points separated the first four exhibits. The Stayman Winesap display of Coffing Brothers, Silverwood, Ind., won first with a score of 91.3. Giles T. Robison's Grimes took second with a grade of 90.27. Robison's orchard is 16 miles south of Indianapolis, at Greenwood. L. V. Doud of Denver, Ind., won third with 89.8 points. The Greencastle Orchard company, of Greencastle, Ind., won fourth, scoring 88.5. Fifth and sixth places went to H. F. Buck of Elberfeld, Ind., and to Robert J. Barr & Son of Washington, Ind. Prizes in this class were 1,000 apple trees, value \$200; second a grading machine, value \$100; third \$35.00, fourth, \$25.00 and fifth, \$20.00.

Many Entries

Dozens of entries were made in the barrel and in the various box classes. Scores of entries were made in trays and in plates, some 280 plates being entered in sixty-eight listed varieties, while numerous unlisted varieties also were shown.

J. O. Staats, of Dana, Ind. won the sweepstakes ribbon for the best box in the show. A little story concerning this award is worth telling. Mr. Staats suffered severe injuries in an automobile accident several months ago, so that his strength failed him when he was preparing to pack his box of Jonathans. Seeing that Mr. Staats was greatly fatigued, one of his chief competitors, William Wetz, manager of the Greencastle Orchard Company, swiftly packed the box for him. "There's where I beat myself out of the purple ribbon," Wetz remarked cheerfully, as he slapped the last apple into place. It proved to be just as he had predicted.

At the end of the show, Mr. Staats had the prize winning Jonathans auctioned off for the benefit of the Red Cross association. They brought \$8.75, almost a dime apiece. Other growers gave boxes, trays and plates to be sold for the Red Cross, realizing a total of \$48.00 for the fund.

The twelve leading prize winners were: Coffing Brothers, Silverwood; Giles T. Robison, Greenwood; Greencastle Orchard Company, Greencastle; John P. Morgan, Washington; Clarence Bowers, Salem; E. E. Brooks, Salem; L. W. Barber, Washington; J. O. Staats,

Dana; H. J. Buck, Elberfeld; L. V. Doud, Denver; Troth Brothers, Orleans and Fred L. Allison, Washington.

Apple Products

Prizes were given on twelve classes of apple products, including apple pie, Dutch apple pie, apple cake, apple jelly, crab apple jelly, apple preserves, apple butter, apple pickles, apple relish, apple marmalade, candied apples and cider vinegar. The apple products were judged by Miss Roberta McNeill of Purdue University, who conducted a three-day demonstration of cooking and canning apples. After she made her dainty "official" tastes the pies were unofficially demolished by a large corps of volunteer judges. Every pie was voted to be worth first prize. The blue ribbon finally went to Mrs. C. H. Reeve of Washington, Ind.

The Washington High School won \$10 as first prize for a canning collection, showing thirty-eight different preserved fruits and vegetables.

Horticultural Meeting

In connection with the apple show, the Indiana Horticultural Society held



J. O. Staats and His Apples

its annual meeting. The foremost horticultural authorities of the north-west, the east and the middle west gathered there to speak upon their specialties. Lewis, Stewart, Alderman, Reddick, Greene, Stuart, Hutt and others took the stage during the best five-day program ever arranged by any state horticultural society.

Especially interest was displayed in the subject of orchard fertilization, which most of the growers asserted meant more dollars in their pockets than any other information can mean just now.

Prof. C. I. Lewis advised that nitrate of soda be applied a full month before the bloom if both vigor of tree and heavy fruitage were desired the first year. Increased size of apples, but no material increase in the number of apples would be the result of later applications, he said. All amounts above three pounds to the tree have shown effects in the second year in the Oregon experiments. He stated that trees which are seriously in need of nitrogen make not only a very light bloom, but set a much smaller percentage than usual of this decreased bloom, and then aggravate the loss by heavy dropping of the fruit and by small size for those apples carried to their premature harvest.

Along this same line, Dr. John P. Stewart, experimental pomologist at Pennsylvania State College, said:

"Fertilizers increase yield rather than growth, although they also help growth somewhat. Clover, vetch and

similar leguminous cover crops also increase yields. But Pennsylvania experiments show that a clover crop does not begin to feed nitrogen to apple trees for three months after it is plowed under. The quickest results are obtained from such a commercial fertilizer as nitrate of soda. Use of fertilizers tend to stop the biennial habit of bearing and to promote annual bearing. A combination of nitrogen and phosphorus may give better results than nitrogen alone under most conditions. The phosphorus need in most Pennsylvania soils is greater than the need for potash."

Advise Nitrate of Soda

Joseph Oskamp, research assistant in pomology at Purdue University Agricultural Experiment Station, led the fertilizer discussion. He said:

"Many Indiana growers have been losing a bet by not using more nitrate of soda. Many got scared at the price last spring of \$100 a ton, but even at that a grower gets profitable returns. We used nitrate of soda on a Bedford orchard of thin soil and increased the crop fivefold. We found the apples and leaves hung on much longer on fertilized trees. If soil is not too sandy we can see the good effects of nitrate of soda two or three years after using it. In sandy soils, of course, it leaches more quickly. Nitrate of soda five pounds to the tree often increases yields five bushels to the tree."

"Every three dollars spent for nitrate of soda brought us an increased return of sixty dollars worth of apples," asserted R. A. Simpson of Vincennes. "This year we used nine tons of nitrate. We already have ordered ten tons for 1918."

H. M. Dunlap, state senator of Champaign county, Illinois, who controls 1,500 acres of bearing orchard near Flora, Ill., added substantial testimony to the revolutions worked by applications of nitrate of soda in his Illinois orchards.

W. S. Perrine, Centralia, Ill., a big commercial orchardist who has been president of the Southern Illinois Horticultural Society for years, cited the favorable results of nitrate of soda on apples during several years experimentation in his own orchards.

Orchard Dusting

Another topic which proved to be of unusual interest was "Orchard Dusting," discussed by Dr. Donald Reddick, horticultural pathologist of Cornell University. Dr. Reddick recommended the dusting method for use in large orchards where scab and codling moth control presented serious problems. While dusting was not always as good a specific for these troubles as were the liquid sprays, the lightness of the outfit and the rapidity with which a large orchard could be protected often makes dusting more effective as far as scab and codling moth are concerned. In talking about scab, Dr. Reddick said:

"The spores from a fallen leaf of last year develops with early spring rains at a temperature of 40 to 50 degrees. Some of the scab spores are blown upward and settle on the green twigs and later on the new leaves. The fungus lives under the cuticle of a leaf, and hence spraying after the fungus is established will not be effective. Spraying should be done before the usual period of rainfall and fog in the spring. The time required for spores to develop will be from ten to fifteen days if it is cold, or eight to twelve days if the weather is warm."

Potato Yield

Prof. William Stuart, horticulturist in charge of potato investigations, U. S. Department of Agriculture, told how the Indiana crop of potatoes had fallen off twenty bushels to the acre in yield, due mainly to poor seed potatoes, and indicated the seed and culture necessary to make a maximum crop in 1918.

Mrs. Edith Rose, of Mitchell, Ind.,

"Hoosier Peach Queen," discussed the fine points in handling the 60 acres of Elberta left to her management through the death of Paul Rose a few years ago. She laid great emphasis upon constant cultivation of the trees, heavy open-center pruning, thorough dormant spraying and honest grading and packing to meet the demands of the fancy market.

Practical Pruning

Prof. W. H. Alderman of West Virginia discussed "Practical Pruning." He advised moderate pruning after the head had been well formed in the first three years' work. Trees moderately pruned until they had been several years in heavy bearing, he said, outgrew and out-bore similar trees heavily pruned.

Prof. W. N. Hutt, of North Carolina, proved that apple storage houses on the farm are practical and profitable. In these houses the cold air can be admitted on frosty nights and a temperature of about 40 degrees maintained for several months. In a time of labor shortage all hands may be put to picking, and the apples stored until later, being graded and packed in a slack season.

Prof. Laurenz Greene of Purdue University told how to minimize losses with frozen apples by having them thawed as slowly as possible.

G. I. Christie, superintendent of agricultural extension of Purdue University, and state food director, urged the co-operation of growers in solving present food problems.

This same note was struck by H. E. Barnard, state food administrator, who said: "When you eat an apple you do a patriotic thing. Remember when a child is eating an apple he is not calling for bread and butter."

Many Excellent Addresses

Some of the other topics and speakers were as follows: "Reporting the Fruit Crop," James R. Duncan, U. S. fruit crop specialist; "Developing the Home Market," C. E. Judson, apple grower at Bristol, Ind.; "Milk, Pork and Apples," D. B. Johnson, grower, Mooresville, Ind.; "Marketing Developments on the Pacific Coast," Prof. C. I. Lewis, Oregon; "Business Organization in Fruit Growing," S. H. Fulton, commercial orchardist, Sleepy Creek, W. Va.; "Co-operative Associations," S. H. Fulton; "Plugging the Orchard Leaks," Prof. Hutt, N. C.; "New Facts About the Codling Moth in Indiana," P. W. Mason, assistant entomologist, Purdue University.

A fruit grower's banquet was held Monday, November 26. Eighty-eight persons attended. H. E. Barnard made the address of the evening. A special apple menu was a feature.

Officers Elected

Officers of the Indiana Horticultural Society were elected Saturday morning, November 24, at the annual business meeting. F. J. Heacock of Salem was re-elected president; C. G. Woodbury, now director of the agricultural experiment station, who has been officially connected with the society for the past ten years, refused to accept the vice-presidency on account of present duties; L. V. Doud, of Denver, Ind., was elected vice-president; H. H. Swaim, of South Bend, long active in the society and president for two terms, was elected secretary-treasurer. He will maintain a permanent office in the experiment station, LaFayette, Ind. Two new members of the executive committee were elected. These were William Wetz, Greencastle, and Prof. Laurenz Greene of Purdue University.

While the executive officers will select the place and the date for the next apple show, the general feeling at the meeting was strongly in favor of Indianapolis. It was also the clearly defined sentiment of the society that future meetings should not be continued over Sunday, but begin early in the week and close on Friday or Saturday.



You want quality fruits quickly

Everybody who plants fruit trees—whether for home orchard or commercial purposes—is after the SAME results: Quick bearing, Quality fruit and Quantity yield with regularity. These are the three cues to orchard success.

To get these results YOU MUST START with the best strains of fruits and sturdy, vigorous rooted trees. You cannot afford to take chances with ordinary nursery stock for the sake of a few cents' saving per tree now, when the whole result of your orchard investment, in land, time and care, depends on the QUALITY of trees that you plant.

Stark City trees are ALL of the highest grade fruit strains; and they are propagated, trained and developed to produce the results that all fruit growers are after.

Both roots and bodies of Stark City trees are specially trained for these results.

Stark City roots are developed extra large and heavy, by scientific methods, aided by an ideal climate and a rare soil of highland limestone and grit formation. These heavy, wide-spreading roots have a great store of vitality, which enables the newly transplanted tree to establish itself quickly and make rapid growth.

Stark City trees are specially trained from the start, so that you won't lose any time in reshaping the tops. The buds on the main trunks and branches are strong and healthy and can be depended upon to start thrifty shoots.

All Stark City trees are GUARANTEED

- to reach you in prime condition.
- to be absolutely true to name.
- to live and make satisfactory growth.

We sell direct from the Nursery. No agents or other middlemen represent us. This insures you the genuine, original Stark City trees and gives you the first-hand responsibility of the Nursery.

Let us help you START RIGHT—services FREE

The proprietors of the Stark City Nurseries are nationally-known fruit experts—men who have devoted their lives to this business. Their experience and advice are at your service at any time, without charge. Consult us as often as you wish—we are interested in your success after you buy, as well as before.

1918 Fruit Book FREE

Describes best fruits, color, quality, ripening season—hardiness, growing habits. Tells which are the best varieties for your section, etc. Apples, pears, peaches, plums, quince, cherries, grapes, bush fruits, everbearing strawberries, ornamental shrubs, roses, shade trees. Get this book now—write today.

Results from Stark City stock:

"The root development is marvelous."—W. G. Turley, New Mexico.

"The care with which you form the tops of your trees will certainly recommend them to experienced planters."—Jos. Gerardi, Illinois.

"Greatly pleased and impressed by the fine roots of your berry plants and your trees. Never saw any so large and strong."—W. H. Sargent, New Hampshire.

"I haven't seen such fine, well-developed trees and plants in 25 years. Every one started growing like touching an electric button."—W. C. Carroll, Illinois.

"Your trees started right off and are much larger now than some I have had out for three years."—W. W. Woodruff, Pennsylvania.

Get these books, too.

"Inside Facts on Profitable Fruit Growing" is a complete illustrated instruction book. "How to Beautify Your Home Grounds" shows how to lay out and care for ornamentals, etc. Each 10c, but both free with orders.

Wm P. Stark Nurseries
Stark City
Missouri Address and name both the same

To William P. Stark Nurseries, Box 21, Stark City, Mo.

Please send books as checked:

- ☐ 1918 Catalog—Free
- ☐ "Inside Facts" (10c enclosed)
- ☐ "How to Beautify Your Home Grounds" (10c enclosed)

I am interested in planting:

- ☐ For Big Markets ☐ For Local Markets ☐ For Home Use

Name

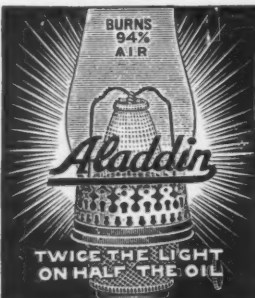
Address

(Give County, and Street, or R. F. D. No.)

Approximate number of

..... Trees

..... Plants



Get One FREE

New KEROSENE Light Beats Electric 10 Days FREE—Send No Money

We don't ask you to pay us a cent until you have used this wonderful modern white light in your own home ten days, then you may return it at our expense if not perfectly satisfied. We want to prove to you that it makes an ordinary oil lamp look like a candle; heats electric, gasoline or acetylene. Passed by Insurance Underwriters. Children handle easily. Tests by U. S. Government and 35 leading Universities show that the new ALADDIN BURNS 50 HOURS ON ONE GALLON common kerosene (coal oil), no odor, smoke or noise, simple, clean, won't explode. Over three million people already enjoying this powerful, white, steady light, nearest to sunlight. Won Gold Medal at Panama Exposition. Greatest invention of the age. Guaranteed.

\$1000 Reward will be given to the person who shows us an oil lamp equal to the new Aladdin in every way (details of offer given in our circular). We want one user in each locality to whom we can refer customers. To that person we will give a special introductory offer to make, under which one lamp is given free. Write quick for our 10-Day Free Trial. Offer and learn how to get one free, all charges prepaid.

Yours FREE **Yours FREE**

MANTLE LAMP COMPANY, 398 Aladdin Building, CHICAGO, ILL.
 Largest Kerosene (Coal Oil) Mantle Lamp House in the World

Men With Rigs or Autos Make \$100 to \$300 Per Month

Our trial delivery plan makes it easy. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before writes: "I sold 61 the first seven days." Christensen, Wis., says: "I have never seen an article that sells so easily." Norring, Ia., says: "25% of homes visited bought." Phillips, O., says: "Every customer becomes a friend and booster." Kemmerling, Minn., says: "No flowery talk necessary. Sell itself." Thousands who are coining money endorse the ALADDIN just as strongly. **NO MONEY REQUIRED.** We furnish stock to get started. Sample sent prepaid for 10 days' free trial and given absolutely without cost when you become a distributor. Ask for our distributor's plan. State occupation, age, whether you have rig or auto; whether you can work spare time or steady; when call start; townships most convenient for you to work in.

KANT-KLOG SPRAYER
 9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. Send for catalog. Agents wanted. Rochester Spray Pump Co. 190 Broadway Rochester, N. Y.

RAISE HARES FOR US
 Belgian Hares, New Zealand and Flemish Giants. Profits Large. We supply stock and pay you \$5 to \$10 each. Also other Fur Animals. Contract and 2 Instruction Books for \$2. None sent without payment. C. C. Burt, 42 Holmes Park, Milwaukee, Wis.

ORNAMENTAL FENCE
 40 designs—all steel. Handsome, costs less than wood, more durable. We can save you money. Write for free catalog and special prices. KOSKIMO FENCE MACH. CO. 451 North Street, Kokomo, Ind.

SMALL FRUIT CULTURE

Notes from Lecture by C. W. Mann and Everett L. Hall, New Hampshire

To begin with it might be well to say that intensive culture is the only way to grow small fruits successfully. Strawberries have been my main crop, as I find no chance of making a profit on commercial plantings of currants, blackberries, and raspberries. More small fruits of all kinds should be grown on the farm, however, for family use.

A Wheel Marker

In setting the strawberry plants it is best to use a marker, as one cannot get help that will set the plants the right distances unless the ground is marked off. Take an old wheelbarrow and put a peg in the wheel every eighteen inches, or whatever distance apart one wishes to set the plants in the row. Then push the marker down where the row is to be and the exact spot is marked for each plant.

I have found that it does not pay to fruit a strawberry bed over two years; with the hill system it might be profitable the third year.

Choice of Variety

The only way to find the best varieties of strawberries is to experiment and see which kinds suit you best. I have grown almost all of the different kinds to some extent. While the fall berries are all right for home use, I consider them too costly for market. For the family garden first quality is the best, and sample is the best for market. The 3W is a great fertilizer for the infertile, as it blooms all over. Even so, it does not bear any heavier than other varieties.

The Chesapeake is a very strong grower; the runners are longer than most varieties. The quality is fairly good. I may try some more of them. While the William Belt is a good quality berry it is a low yielder. The Berry-more is a fine, large fruit, but very sharp, and the Senator Dunlap tastes to me like a raw turnip.

We do not get a living by raising a crop no matter how good it is. We must market better. In marketing the strawberry we should develop the local market thoroughly before spreading out.

Picking and Hauling

A common fault of strawberry growers is that the fruit is picked before it is ripe so that it will keep firm longer. Needless to say, this fruit is always sour, and never has the real strawberry flavor. If the berries are allowed to ripen thoroughly on the vines, they will please the consumer, and he will purchase more than he otherwise would. My fruit is carefully packed in clean boxes with my name on each box.

Great care must be used in the handling and hauling of berries. Some time ago I made a special wagon for carrying my berries. I built an upper deck, and put some good springs between that and the wagon bed. I now use a truck equipped with special springs.

In shipping by express the ordinary 32 quart crate does not protect the berries from rough handling. I have seen the crates dropped two or three feet. I once made a large crate having springs in the bottom, which held about one hundred boxes, and weighed about 150 pounds. This was so heavy and clumsy that the express agents could not harm it.

CONVENIENT GRAPE TIE

A convenience and safety device for holding grape trellis wires on stakes is the Beckwith grape tie. It consists simply of a flat, headless iron nail tapering to a blunt point. Near the wider end is a hole through which a short wire is inserted and fastened. The "nail" is driven into a stake at the proper height and the trellis wire laid on it. The short tie wire is passed around the stake and around the "nail" or through the hole. Even should the stake split or be too small to hold a staple, the tie wire around it will hold the trellis wire up. This grape tie is good also to hold canes against stakes, and the wires alone are better for fastening canes to trellises than are the strings so commonly used. They can be simply untwisted in pruning and used year after year.

Minnesota Horticultural Society Meeting

Mrs. Phelps Wyman, Minnesota

The reaction to wartime conditions by horticulturists had a positive and triumphant ring at the annual convention of the largest horticultural society of the United States, the Minnesota State Horticultural Society, held in Minneapolis, December 4-7. There was no slacking of interest in nor attention to fruits but vegetables came in for greater and more serious attention. The problems of the new war gardeners, children and those of mature years, were discussed and the members pledged themselves to put all of their stock of knowledge acquired from experience at the service of the newer or younger gardeners.

Resolutions were passed and sent to President Wilson, Herbert C. Hoover, food administrator of the United States, and to Governor Burnquist, pledging loyal and unwavering efforts in food conservation and production. Hugh J. Hughes, chairman of the marketing committee of the state public safety committee, made a preliminary report on the work of his committee which was organized because the safety commission felt it to be a duty devolving upon state authorities to provide a market for those who had become food producers in response to war demands and were without adequate markets or experience in marketing.

83 Counties Organized

Out of 86 counties in the state, 83 were organized and the work was as varied as the products of the state. Thousands of inquiries were answered and so far as possible producers were put in touch with reliable commission men and wholesalers and were advised to work through them especially where carload lots were offered. Small lots were handled by the committee through its own agent and included 150 cars of potatoes, and 50 to 60 cars of apples and mixed vegetables. Much of this produce as well as other lots sent directly to dealers by the advice of the committee would have been wasted without this service. Dealers co-operated heartily and played fair because the plan did not contemplate their elimination or undermining. As a result better prices were secured than would have been possible through local markets, amounting in the case of potatoes, it was estimated, to 15 to 20 cents a bushel.

"The plan," Mr. Hughes said, "was wholly a wartime experiment, but it may have a future development, but this can not be forecast at present. I should not favor using it to interfere with existing marketing facilities where these are adequate, but in unoccupied territory the plan seems to have possibilities."

Pes. Thomas E. Cashman in commenting on the report expressed confidence that in the future provision would be made to prevent waste of food and that while more had been grown last year than ever before less was wasted.

Experimental War Garden

Clarence Wedge of Albert Lea, a former president of the society, reported on an experimental war garden he made in which he grew vegetables of a net value of \$12.41 on two square rods in spite of a heavy investment in tools and manure and bad weather conditions. His success he attributed to constant cultivation with an iron-toothed rack and a liberal use of manure, a load to a square rod.

In co-operation with the extension division of the University of Minnesota the society has recently organized a junior horticultural society in connection with the boys' and girls' garden and canning clubs. A state contest is conducted and the five prize winners and a canning team from the prize club are given a trip to the annual meeting of the society to tell the stories of their gardens and to receive their medals and other awards.

The state championship was won this year by Carl Potthoff, a 13-year-old boy

of Jordan, who was also the champion last year. He raised and canned 1,750 cans of tomatoes, 150 cans of corn and a miscellaneous supply of fruits and vegetables for family use. He won in spite of many handicaps. He used entirely pieces of waste land, having none of his own, and the three acres was in five lots. He grew his own tomato plants, losing entirely his first lot which he attempted to start in the house. This and the use of too many plants of a late variety caused a loss of 130 bushels of tomatoes in the unseasonably early frost, cutting his pack in half. He did all the work with a small home canning outfit and directed all the work himself.

The sectional winners were: Southern, Ralph Berman, Rushford; south central, Irene Johnson, Blooming Prairie; central, Alfred Delf, South St. Paul; northern, Frieda Maurer, Mora. The champion club and canning team was from Sleepy Eye, where 4,500 quarts were canned and much other good work done, especially in demonstrating the cold pack method at fairs.

Dr. Burton Present

The new president of the University of Minnesota, Dr. Marion L. Burton and the new dean of the college of agriculture of the university first met their horticultural constituents officially at the convention. Dr. Burton, in an inspiring patriotic address, urged everyone to consider individually how he could co-operate to enlarge and develop the national resources. He declared it was everyone's privilege as well as duty to do more than the Government is asking, for it is the duty of the United States to provide for its allies the maximum aid.

Dean Thatcher, in speaking on "The Value of Experimental Work," reminded his hearers that experimental work was not farming and should not be compared with farm operations in either methods, expense or value of the material product. Its purpose is to learn facts that others may use in commercial growing. Many of the experts are not farmers, but chemists, biologists, engineers, etc. A few moments before Dean Thatcher's speech there had been an animated discussion on the advisability of using coal ashes in gardens. Dean Thatcher, to illustrate his point, testified as a chemical expert that coal ashes has the same value in soil as river sand; under some conditions it is useful, but it is not a fertilizer.

The fruit exhibits which are always an important feature of the convention were of a high grade of excellence and included a considerable display of canned fruit and vegetables, a new feature. The most important fruit quest of the society is for high grade, hardy winter apples, and for years there has been offered a prize of a thousand dollars for a seedling apple tree "as hardy and prolific as the Duchess, with fruit equal to the Wealthy in size, quality and appearance, and that will keep as well as the Malinda." Nothing has yet been offered approaching that exacting standard, but in the search a considerable number of valuable winter seedlings have been developed and at least partly tested. An annual prize of \$100 is offered for the best late winter seedling. Several apples offered in competition scored 90 to 92, but an apple from the state fruit breeding farm, not in competition, excelled them. This apple, known as No. 300, was exhibited for the first time.

A New Plum

Of tree fruits the plum ranks next to the apple in importance in the territory embraced by the society, Minnesota and strips of contiguous states whose climatic conditions are similar. As a stimulus to experimenting by individuals, ten years ago Charles M. Loring, a pioneer member of the society, offered a prize of \$100 for an improved hardy plum. The first serious candidate for the prize appeared this season and the

fruit committee, after careful investigation, found it worthy and awarded the prize to John Vikla of Lonsdale, Minn. The fruit is of extraordinary size, being 2 1/4 inches in diameter, well colored and of firm flesh; in flavor it suggests the peach and is without astringency. Being very productive and an excellent keeper and ripening well when picked green, it gives much promise as a commercial variety for the cold northwestern section. Apparently its only flaw is that it is not a freestone. It is an accidental hybrid between a Burbank and some unknown parent, probably of native plum stock.

Great interest is always shown in the report of the state fruit breeding farm given by Supt. Charles Haralson summing up the progress of the year. After nine years of experiments the superintendent and members of the society are satisfied that at least a June strawberry, No. 3, and No. 4 raspberry are entitled to the leading places as market berries and are rapidly taking them as fast as plants can be supplied. Among other important fruits that have successfully withstood extensive and severe tests are another strawberry, No. 935, having the good qualities of No. 3 and coming a week later, an everbearing strawberry No. 1017, two fall raspberries, several plums, sand cherry hybrids with Climax plum and with the apricot, single-flowering almond peach, a beautiful ornamental shrub and a hardy hybrid purple leaved plum.

Market Gardeners

The testimony of the market gardeners on the new fruits was expressed by A. Brackett of Excelsior, who has grown the older ones for several years. He declared that the No. 4 raspberry was worth ten times the whole cost of the fruit breeding farm from its establishment. He believed that the No. 3 and No. 935 strawberries are all that the commercial grower needs in June. From an acre of everbearing, No. 1017, for a long period this year he picked \$9 worth of fruit a day. This berry if allowed to fruit in June will produce more berries than any other market variety. Mr. Brackett expressed his belief that Minnesota is the leading state in fruit breeding.

F. W. Kimball, of Austin, in speaking on his experience of 25 years with a top-worked orchard said that when the thousand dollar prize apple arrived it would be worth millions to the state, but the path to that fruit is long and he did not have time to wait for it, so he took the short route to fine fruit in Minnesota of top working. Mr. Kimball has used extensively Virginia crab and Hibernia as stocks, but prefers the latter and young trees for working. He has experimented with all the fine hardy varieties in the scions with general success.

Prof. Richard Wellington of the agricultural school presented the returns on a questionnaire on the best varieties of apples for the Minnesota orchard. Out of 136 queries 130 answers were tabulated. There was substantial agreement on the four leaders, these being in order of rank, Wealthy, Duchess, Patten's Greening and Northwestern, but beyond that the answers scattered widely. In the discussion there was much criticism of the Northwestern Greening as a general commercial orchard apple.

Charles G. Patten of Charles City, Ia., originator of the Patten's Greening, and much other fine fruit was present and spoke on his fruit breeding work of the past year. He gave much satisfaction with his positive statement that he has the stock for the development of a hardy blight proof pear from a Chinese sand pear strain that is harder than the best apple stocks. Mr. Patten said he had pear seedlings 18 years old that will stand 10 to 15 degrees more cold than the Duchess of Oldenburg. These seedlings are now bearing and will furnish the foundation for a fruit of fine quality.

Get My Price FIRST

BECAUSE of the high prices generally prevailing you ought to get my price. You can buy direct from our factory at the lowest cost. But that isn't all. The Monmouth Disc is easier on your horses. Makes a better seed bed for larger crops, turns around as easy as a plow, cuts weeds and clover and turns trash under.

Monmouth Tongueless

Guaranteed for Five Years

Blades are made of high carbon steel. Adjustable scrapers, hard maple bearings, hard wheels and transport trucks if you want them. We also make complete line of Tractor Discs. Free trial for 30 days. Return it at our expense if not satisfied and we will pay freight both ways. Send a postal card for full details on farm tools and supplies. Get my Free Book and low money-saving prices now. Ask the Flow Man with

Complete Line of Tractor Discs

Monmouth Plow Factory
296 S. Main Street
Monmouth, Ill.

Quick Shipments from Monmouth, Kansas City, Omaha, Fargo. Free Trial 30 Days

Make more Money Pull big stumps by hand

Clear your stump land cheaply—no digging, no expense for teams and powder. One man with a K can rip out any stump that can be pulled with the best inch steel cable.

Works by leverage—same principle as a jack, 100 pound pull on the lever gives a 40-ton pull on the stump. Made of the finest steel—guaranteed against breakage. Endorsed by U. S. Government experts.

HAND POWER
K Stump Puller

Write today for special offer and free booklet on Land Clearing.

Walter J. Fitzpatrick
Box 352
182 Fifth Street
San Francisco
California

SPRAY!

Grow More Dollars

Don't let bugs, worms, scale and blotch rob you of profits that should be yours. The Deming Spraying Catalog will show you an easy and inexpensive way to guard your crops. New 1918 edition (40 illustrated pages) showing over 25 types, free. Write

THE DEMING COMPANY
311 Depot St., Salem, Ohio
Hand & Power Pumps for all Farm Uses

USE DEMING SPRAY PUMPS

9 CORDS IN 10 HOURS

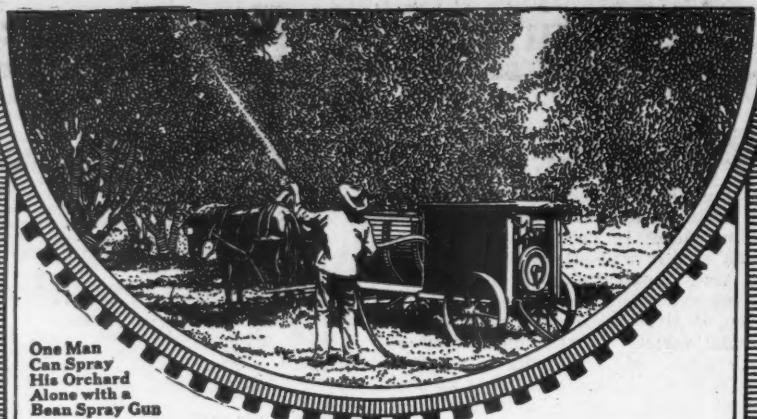
RUNS EASY on Rockcrete. weight only 45 lbs. SAVES DOWN TREES. EASILY CARRIED.

BY ONE MAN. IT'S KING OF THE WOODS. Saves money and backsache. Send for FREE catalog No. B124 showing low price and latest improvements. First order gets agency.

Folding Sawing Machine Co., 161 West Harrison St., Chicago, Ill.

"Hoosier Roses" FREE

An exquisite Rose Book, printed in natural colors FREE. Explains rose and flower success and how to get "Baby Doll," "Passion" roses and gold Rose Bush tree. Write for book. HOOSIER ROSE CO., Box 153, New Castle, Ind.



One Man
Can Spray
His Orchard
Alone with a
Bean Spray Gun

Write Us Now

Find Out Why This Sprayer Leads All Other Makes

FILL out the coupon and mail it to us and we'll send you the BEAN Power Sprayer catalog. This book tells why, for the past 33 years, BEAN Sprayers have set the standard. It describes all the BEAN'S advantages and shows why

you'll want a BEAN Power Sprayer. It pictures plainly some very important patented features and explains what these features mean. Every man who is going to buy a sprayer owes it to himself to know all about them.

Valves Are Important

If you've had spraying experience you know that some valves can cause no end of trouble and delay in cleaning. The patented BEAN Pressure Regulator permits the removal of valves in two minutes each, under full pressure and with the engine running.

You know that stuffing boxes are bothersome. A BEAN patent eliminates them.

And these are but two from among ten advantages that make men want the BEAN. Others are: Cylinders that no spraying liquid can injure; eccentrics instead of cranks; direct gear connections—no wasted power—no slipping belts—no levers with worn-out pins and joints. A Novo engine—frost proof and reliable. All make the BEAN more effective.

BEAN Power Sprayers Compare All Other Kinds

Compare any sprayer with the BEAN and match them point by point. Decide from experience, or from a friend's knowledge, which sprayer is the best. Remember the preference that the BEAN enjoys—that the BEAN out-points the others. Remember that this machine comes from the world's oldest sprayer factories, and that Bean Sprayers have been developed through 33 years of tests.

Also makers of hand and barrel pumps and all accessories including new Spray Guns.

Send the Coupon

Send the coupon now. It doesn't obligate you. It simply brings you facts. You want all the facts before you purchase a machine that is so important. Write us and tell us your spraying needs. We make sprayers for every spraying purpose.

Bean Spray Pump Co., 16 Hosmer St., Lansing, Mich.
Bean Spray Pump Co., 12 W. Julian St., San Jose, Cal.

Send me Spray Catalog and full information without obligation on my part.

Name.....
Street.....
City..... State.....
Kind of Fruit..... Number of Acres.....
You Grow.....



JOHN BEAN
Inventor
John Bean who invented the first double-acting force pump used in wells, also invented and constructed in 1883 the first high pressure spray pump with air chamber.

U. S. Grading and Packing Law

The following grade specifications and requirements for marking packages containing apples are submitted for the consideration of growers and dealers who are interested in the adoption of apple grading and packing regulations. The specifications are based upon the results of investigations conducted in states having apple grade laws, as well as in other apple producing sections. Write to the Bureau of Markets, Dept. of Agriculture, Washington, D. C., and express your opinion in regard to them.

Grade Specifications

"Standard Fancy" shall consist of hand-picked, properly packed apples of one variety, which are well grown specimens, normal in shape, uniform in size, of good color for the variety, and which are free from dirt, insect injury, fungous disease, bruises, and other defects, except such as are necessarily caused in the operation of packing. "Uniform in size" shall be construed to mean that apples contained in any one package shall not vary in size more than one-half inch in diameter.

"Standard A" shall consist of hand-picked, properly packed apples of one variety, which are well grown specimens, normal in shape, of not less than fifty per centum of good color for the variety, and which are practically free from dirt, insect injury, fungous disease, bruises, and other defects, except such as are necessarily caused in the operation of packing.

"Standard B" shall consist of hand-picked, properly packed apples of one variety, which are well grown, and practically free from insect injury, fungous disease, or other defects; provided that apples having healed-over insect punctures, small scab or blotch infections, fruit spots, or other defects not including worm holes which, taken singly or collectively, do not materially deform or discolor the fruit, shall be admitted to this grade.

"Unclassified" shall consist of apples which do not conform to the foregoing specifications of grade, or which though conforming, are not branded in accordance therewith; provided that if more than 10 per centum of the apples show decay, or worm holes, or are badly deformed or badly discolored by scab, blotch, insect injury, or other defects, the package containing them shall be marked "Culls" in addition to the other marks or brands required.

A tolerance of 6 per centum below the standard shall be allowed in the Standard Fancy grade, 10 per centum in the Standard A grade, and 15 per centum in the Standard B grade; provided that not more than half the foregoing tolerance values shall be allowed on any single grade specification or defect. Such tolerances shall apply to size, color, and other grade specifications and shall be computed by counting or weighing the specimens which are judged to be below the standard for the grade in any respect, and those which are found to be smaller than the minimum size, marked on the package.

In all the grades specified, the apples included in the face or shown surface shall fairly represent the size, color, and quality of the apples in the package.

Marking Requirements

Every closed package containing apples grown (in a given state or by members of a given association, etc.) which is sold, offered, or consigned for sale, packed for sale, or shipped for sale, shall bear upon the outside of one end in plain letters or figures, or both, the name and address of the person by whose authority the apples were packed, the true name of the variety, the grade of the apples therein contained when packed or repacked, and the minimum size or the numerical count of the fruit in the package. If the true name of the variety is not known to the packer or the person by whose authority the apples are packed or branded, then such variety shall be designated as "unknown." Every package of apples which is repacked shall also bear upon the same end of the package the name and address of the person by whose

authority it is repacked, such name and address to be preceded by the words "repacked by." The letters and figures used in marking or branding closed packages of apples under these provisions shall be of a size not less than twenty-four point gothic. Provided that closed packages containing apples which cannot be readily marked on one end, so as to bear conspicuously the information herein specified shall be marked or branded in such other conspicuous place as may be prescribed by the regulations promulgated hereunder.

The marks and brands prescribed may be accompanied by any additional marks or brands which are not inconsistent with or do not in any way obscure the marks and brands required.

The minimum size of the fruit in all grades, shall be determined by taking the transverse diameter of the smallest fruit in the package. Minimum sizes shall be stated in variations of one-quarter of an inch, as two inches, two and one-quarter inches, two and one-half inches, two and three-quarter inches, three inches, three and one-quarter inches, and so on, in accordance with the facts. Minimum sizes may be designated by either figures or words and the word "minimum" may be designated by the use of the abbreviation "min."



Kirstin One-Man Stump Puller

This KIRSTIN One Man Stump Puller is in a class by itself. It is as superior as it is different. Just a steady back and forth motion on the lever gives tons of pull on the stump.

The secret of its great power is in double leverage. Made of high-grade steel, combining great strength, durability and light weight. Soft steel clutches grip and pull without wear on the cable. Clears over an acre from one anchor. Changes the speed while operating.

Thirty days' free trial on your own land. Three years' guarantee, flaw or no flaw. Six months to pay, if you wish.

Get Big Free Book and Very Special Offer on One Man and Horse Power Pullers—all sizes.

A. J. KIRSTIN COMPANY

2900 Ludington St. Escanaba, Mich.



IRON AGE

Farm, Garden and Orchard Tools

Answer the farmers' big questions.

How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed.

Means \$5 to \$50 extra profit per acre.

Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses

No Doubles

Bateman M'F'g Co., Box 16B, Glenock, N.J.



KITSELMAN FENCE

Get It From the Factory Direct

MADE OF OPEN HEARTH WIRE

heavily galvanized—strong

lasting, long-lasting, rust-resisting fence. Sold direct to the farmer at wire mill prices.

Here's a few of our big values

26-inch Hog Fence—21¢ a rod

47-inch Farm Fence—31¢ a rod

48-inch Poultry Fence—34¢ a rod

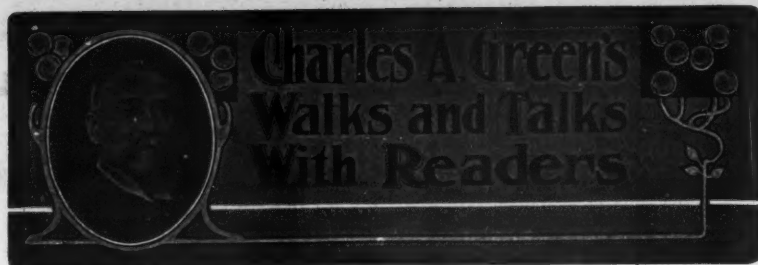
Special Prices on Galv. Barbed Wire

Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at reduced money-saving prices. It's free. Write today.

KITSELMAN BROS. Box 208 Munote, Ind.

Kindly Mention American Fruit Grower when writing to Advertisers

Kindly Mention American Fruit Grower when writing to Advertisers



He who makes a home establishes an influential part of the government of his country. The home is largely what we make it. It may be attractive inside and out or unattractive. It may express prosperity or poverty, good management or bad, rest or unrest. No home can be attractive that is not the dwelling place of love on the part of the husband, the wife and the children. A home in a rundown condition is a sad thing to contemplate. A wrecked fence, buildings that have not been painted for twenty years or more, lawns unmowed, blinds hanging upon one hinge, chimneys with the bricks crumbling at the top, roofs that need shingling, barns from which the clapboards have disappeared, all tell of negligence and bad management. All may not have the taste or ability for making the grounds about their homes attractive, but at least they can have a few flowering shrubs, a few shade trees, vines and flowers.

Does It Pay to Furnish Fruit for Your Laborers?

My opinion is that it does pay. I once asked an experienced farmer whether it was not cheaper for him to have his men board themselves than to have them boarded at the farmer's house. I shall never forget his reply, which was: "It may be cheaper to have the men board themselves, but the question is will they feed themselves well enough?" The well fed farm hand or laborer anywhere cannot expend more than his food supplies. If he has the proper food he has increased strength to expend upon the farm or elsewhere. Fruits tend to give greater strength, greater health, greater effectiveness and a clearer brain. Yes, feed your hired man all the fruit you can secure or afford.

Sweet Apples

Sweet apples are not grown so extensively as in past years. Nurserymen notice less call for sweet apple trees than for other varieties. I cannot understand why this is so for every orchard or home supply of apples should include a few sweet apple trees. For the commercial orchard I could not recommend the planting of many sweet apples as the call is mostly for acid varieties which are the best for cooking. But for baking the sweet apple is far superior in my estimation.

What Has the Rural School Done For You and For the Country?

We hear much about the good work of the high schools of cities and of the universities and they are deserving of all praise, but we hear little about the rural school and its benefits. There is a vast congregation of people whose only source of education has been the rural school. If this vast concourse of people could not have had the advantages of the common school a large portion of them would have been entirely without education. I recall a cobbleschoolhouse which stood out in the open country two miles from any village, for over fifty years the center of education for the tract extending a mile or two in every direction. I recall the teachers of this school, many of them men or women of ability. A number of the pupils became distinguished in after years. After leaving this country school the students were thrown on their own responsibility and finished their education in the great school of experience.

Mush and Milk

Let no one despise this wholesome dish. I can always make a hearty meal of mush and cream. It seems to agree with me as it does with most people. It

is a nourishing dish. What is left over is fried the next morning and this is even better than fresh cooked mush. Corn meal is more fattening than most grains.

What Use is Being Made of Your School House During the Winter Evenings?

There should be a weekly meeting of some kind at the school house thus making it a public hall during the winter. When I was living on the fruit farm I organized a Chautauqua circle, and during the winter time had a lecture course and on another occasion we had a debate, all occurring in the public school house, and all largely attended, right out in the open country.

Too Late for the Train

Mortals need continually to be urged to be on time. It is a serious thing to be late to any event since there is danger of forming a habit of not being on time. Pleasure, profit and even life and death depend upon being on time. This publication has for nearly forty years been published on time. I cannot remember one instance where it was behind time. Our railroads have taught our people the necessity of being on time. If these railroads and steamships as well should wait for passengers it would be a calamity in many respects, but particularly in indulging people who are apt to be too late for the train.

Going Nutting

The early winter months are nut eating months, thus I am reminded of my nutting experiences as a boy on the farm. I can never forget these interesting autumn days that I have spent so pleasantly in hunting nuts that have fallen from the big forest trees or have been thrown down by the squirrels. The natural forests of the early day contained many hickory nut trees which thrived though closely surrounded by the maple, beech and oak. I wonder that I was not maimed or killed by the falling branches of these great trees or those surrounding them, since the best nutting time was during or after a gale. How different the size, shape and quality of the nuts produced on the different trees in these woodlands. I recall today the particular flavor of many of these nuts, some of them having thin shells and fat meats, others larger but having coarser shells and meats not so oily and delicious. The butternut, black walnut and chestnut trees of old times were mostly in the open fields.

Resistance

I ask myself why it is that certain berries of a cluster of grapes held in storage mold or decay while others on the same stem remain in perfect condition, and why certain apples in a barrel decay while others do not. The answer to this question is in the fact that the berries or other fruit that decays has less resistance than its companions, provided that no accident has happened otherwise to shorten its existence. The same question may be asked of human beings. Why do some perish while others are vigorous and healthy? Those that perish have less resistance. They may have inherited certain weaknesses or they may not have made the most of their opportunities to lay by a surplus of energy or resistance.

Well mated teams always sell to better advantage than single animals. When you have a horse or colt for sale therefore it is well to buy a mate for it if possible and then sell the two together.

Don't Pay Freight on Water

Spray with Niagara Soluble Sulphur Compound

In Powder Form



Standard 100-lb. Drum

Assures Clean, Top-of-the-Market Fruit

Dissolves Instantly in Cold or Hot Water. Consider This Comparison. This 100 pound drum of Niagara Soluble Sulphur Compound is equivalent to a 600 pound barrel (50 gal.) of lime and sulphur solution. No leakage—No crystallization—Keeps indefinitely anywhere. Costs less to buy and saves labor cost, too. You have less to haul and handle. No barrels to return. Niagara Soluble Sulphur Compound, after 8 years of test, is declared by thousands of fruit growers to be superior to the old-fashioned lime and sulphur solution.

More Economical—Efficient—Convenient—Practical

Write today for spray calendar telling how to grow clean, high quality fruit and at the same time reduce your spray bills at least 25%.

NIAGARA SPRAYER COMPANY, 132 Main St., MIDDLEPORT, N. Y.

Prof. Hansen's Hybrid Plums

Prof. Hansen's Hybrid Plums are the hardiest and most delicious plums grown. They thrive excellently in all climates and are very quick producers, bearing fruit in two years. Get this fine Bargain Collection and get started raising Hansen Plums. They are money makers and at this price are a wonderful buy.

10 Finest Varieties Hansen Hybrid Plums only \$3.95

Send your order in right away. I will ship them any time you say. My Big 1918 Catalog of seed and nursery bargains free on request.

D. B. Gurney, President
GURNEY SEED & NURSERY CO.
200 Gurney Square - - - Yankton, S. D.

Get My New Patriotic Prices!

On Spreaders — Tractors — Engines — Separators

Find out and satisfy yourself how much you can save by getting your farm implements direct from Galloway—the maker. This direct dealing is actually buying at wholesale, and even less, and saves you 25% to 50% on everything you need on the farm—Spreaders, Tractors, Engines, Separators, Wagons, Implements, Vehicles. I'll tell you why you can save by direct buying in my big, free book. I'll also tell you where the extra money goes—the money you save by dealing direct with the manufacturer.

Write for My Free Book That Keeps the Prices Down

It's the greatest bargain book ever published, and will save my farmer friends thousands and thousands of dollars. Write me for the book today. A postal will do. Let this book be your buying guide and save you \$200 to \$500 on your summer purchases. Don't hesitate. Don't put it off—but send tonight for my big money-saving book. Advantageous shipping points save you freight.



Why not purchase and install that heating plant you have been intending to buy? There are three good systems—hot water, steam, and hot air.

The Mississippi A. & M. College says the average farm woman in that state "walks 152 miles every year carrying water in the house and carrying it out again, when for \$13.40, retail price, a pump, sink, supply and drain pipes could be provided to perform this service." Let's not forget to put in waterworks.

The children will appreciate a little help with their studies these long winter evenings. It is not unlikely that it will also enliven your own mind a little.

STRAWBERRY PLANTS

3,000,000 of them at \$2.50 per 1,000. Catalog free. Address

C. S. PERDUE Box 15, Showell, Md.

LANDSCAPE GARDENING

LIKE EVERYTHING ELSE MUST BE WISELY PLANNED IF IT IS TO BE EFFECTIVE. ENTERPRISING HOME OWNERS WILL SURELY APPRECIATE THE IDEAS AND SERVICEABLENESS OF THE 1918.

WOODLAWN CATALOG

JUST OFF THE PRESS. TELLS OF SCHEME FOR WAR FRUIT GARDEN. IT RADIATES SERVICE—WORTH GETTING. SHOULD WE SEND YOU ONE? NOW? WRITE.

WOODLAWN NURSERIES—ALLEN L. WOOD
883 GARSON AVENUE, ROCHESTER, N. Y.

Kindly Mention American Fruit Grower when writing to Advertisers

The Jefferson

RICHMOND, VA.

Most Magnificent Hotel in the South

EUROPEAN PLAN

400 Rooms 300 Baths

Rooms Single and En Suite, With and Without Private Bath. Turkish and Roman Baths. Spacious Sample Rooms. Large Convention Hall

RATES—\$1.50 PER DAY AND UP

O. F. WEISIGER; Manager

IRON AGE

Farm, Garden and Orchard Tools Answer the farmer's big questions: How can I grow crops with less expense and labor? How can I grow fancy fruit at low cost? The

IRON AGE Barrel Sprayer

(horizontal) solves the spraying problem for the busy farmer. Can be used in any wagon, cart or sled. Reliable, easy-working pump placed outside the barrel—prevents rusting—all parts easy to reach. 100 to 125 pounds pressure with two nozzles. 50 and 100 gallon sizes. We make a full line of sprayers. Write today for booklet.

Bateman Mfg Co., Box 16-E, Grenloch, N. J.



Hardie Orchard Gun \$12.00

Here it is, the new Hardie Spray Gun that is revolutionizing spraying methods. Does the work quicker and easier than ever before. This device shoots an enveloping spray, carrying the spray to the tree tops. Takes the place of the cumbersome spray rods and tower. With the Hardie Orchard Gun you can spray all day and hardly notice it. Spray easily regulated. No complicated parts to get out of order. Lasts for years. Made by Hardie Manufacturing Company, manufacturers of Hardie hand and power sprayers and spraying devices for over 18 years. See one at your dealer's or send direct to us. Guaranteed satisfactory or money back.

Hardie Spray Pump

Without question the simplest pump ever put on a sprayer; gives high pressure and big capacity—smoothest working, saves gasoline. Many growers are increasing the capacity of their sprayers by putting on Hardie spray pumps. Easy to install and made in sizes to fit your needs. Same design pump as used on the famous line of Hardie Power Sprayers. Contains all Hardie features such as Manganese steel crankshaft, phosphor bronze bearings, threadless valve cages and pressure regulator—an integral part of the pump. The one pump that has made good everywhere.

Write for Hardie Catalog. Describes Hardie 1918 sprayers and spraying devices. Know about the Hardie line before you buy.

THE HARDIE MANUFACTURING CO.
Hudson, Mich.
Branches in Portland, Ore.; Kansas City, Mo.; Hagerstown, Md.; Brockport, N. Y.

These tools do the work of 3 to 6 men

One man can cultivate 3 to 6 times the usual acreage with Planet Jr implements. They are so designed and constructed that with greatest ease they do thorough, rapid cultivation. You save time, labor, money, cut down living expenses, and increase the food supply.

No. 25 Planet Jr Combined Hill and Drill Seeder, Double and Single Wheel Hoe, Cultivator and Plow sows all garden seeds from smallest up to peas and beans, in hills or in drills, rolls down and marks next row at one passage, and enables you to cultivate up to two acres a day all through the season. A double and single wheel hoe in one. Straddles crops till 20 inches high, then works between them. Steel frame and 14 inch steel wheels. A splendid combination for the family garden, onion grower, or large gardener.

No. 17 Planet Jr is the highest type of single-wheel hoe made. It is a hand-made machine whose light durable construction enables a man, woman, or boy to do the cultivation in a garden in the easiest, quickest and best way. We make 24 styles—various prices.

Planet Jr.

S. L. ALLEN & CO.
Box 1107C
Philadelphia

New 72-page Catalog, free!
Illustrates Planet Jr in action and describes over 55 tools, including Seeders, Wheel-Hoe, Horse-Hoes, Harrows, Orchard, Beet- and Pivot-Wheel Riding Cultivators. Write for it today!

Tiffany's All Steel Tree Pruner

Made on honor from start to finish. This entire tool is forged from bars of fine crucible steel carefully tempered in oil and fitted with short hardwood hand-grips, which cannot come off, split or pinch the fingers. The jaws of this pruner open very quickly without spreading the handles too far apart, slip onto limbs easily and work into narrow places; they are so designed that the large limbs are held close to the joint, which gives great leverage. The blade has the drawcut principle and cuts very smooth and easy. It is light, handy, and efficient and gives service and satisfaction. Used in the best colleges and universities. Length 24 inches, weight 3 lbs., price \$3.00 postpaid. If not satisfied return the tool in ten days and your money will be promptly refunded.

Carroll R. Tiffany
Manufacturer
Conklin, N. Y.

CUTS 1½ inch LIMBS

Kindly Mention American Fruit Grower when writing to Advertisers

SPRAYING

R. T. Osburn, Arkansas

Necessity compels us all to spray.
A big proposition in every respect.
Proper time, material, thoroughness, no delay.
There is not a single item we can neglect.

The San Jose scale is a pest
That was from China brought,
And it has never been at rest,
Judging from the havoc it has wrought.

On the bark it takes its hold,
And there it stays
Until we give it a coat
Of lime-sulphur to end its days.

We must take great pains
Not to miss a single one,
For it makes great pains
If our work is not well done.

In the first warm days of spring,
As the buds begin to open up,
Scab infection will begin
In the bottom of the cluster cups.

To control this fungus disease,
Our remedy is lime-sulphur solution,
To be used on our trees
At the one to twenty-five dilution.

We must be thorough and efficient,
And every cluster cup hit.
If our spraying is deficient,
Scab will certainly show it.

As the petals begin to drop off,
There is seen flying around
Our old enemy, the codling moth,
On his annual tour, evil bound.

To each calyx cup, a visit pays,
And a small egg conceals,
Which in a few days
A tiny worm reveals.

As these worms must be fed,
To prevent their depredation,
We use the arsenate of lead
And lime-sulphur combination.

It is not yet any too late
To be immune from scab—
To control any further outbreak,
The lime-sulphur we add.

High pressure is necessary to drive
The spray into the calyx cups.
If we are not thorough and precise
In our work, failure results.

The leaves are increasing in size,
And the apples are growing fast—
Many worms of the later hatch survive,
And scab infection is not past.

Two weeks after the petals shed,
We coat the apples and the leaves
With lime-sulphur and lead,
To insure against worms and disease.

About the middle of June is the time,
The bitter rot, we prepare to fight.
The future weather we cannot define,
And to propagate spores it may be right.

As the apples must be made secure
Against this disease, Bordeaux mixture
Is the only remedy that does procure
Satisfactory results, and has become a fixture.

The Bordeaux mixture checks
Millions of blotch and bitter rot spores,
And the lead is combined for insects
And worms, that abound in scores.

If the weather is hot and sultry,
These spores are ever active—never dilatory.
It will take a continuous fight—not desultory.
"Preparedness," "watchful waiting" and
timely action tell the story.

LITTLE IRISH GIRL

As I went out one evening
From Tipperary town,
I met a young colleen
Among the heather brown.
"Ah," says I, "perhaps you're lonely?"
She tossed her pretty curl.
"Well, maybe I prefer it!"
"Och! the dear little girl."

Says I, "Perhaps you're married."
Says she, "Perhaps I'm not!"
Says I, "I'll be your gossoon."
Says she, "I'll not be caught."
"Oh! your eyes are like the ocean
And your heart is like a pearl!"
Says she, "Well, then, I'll keep it!"
"Och! the dear little girl."

—Edward Teschemacher.

We occasionally wish that we might
put up some of our acquaintances by
the cold pack method, and we would
have to be pretty lonesome before we'd
unscrew the top to let them out.

My Best Engine Offer

"50"

"50-50" means that I stand ready to meet you half way on engine prices—sell direct from factory—Make immediate shipment—save you \$15 to \$200 according to size. I make nothing but engines—Kerosene and Gasoline—2 to 22 H.P.—give you the benefit of 51 years continuous, practical, engine-building experience. Write for latest price list—all styles—Stationary, Portable and Saw-Eng.

WITTE KERO ENGINES

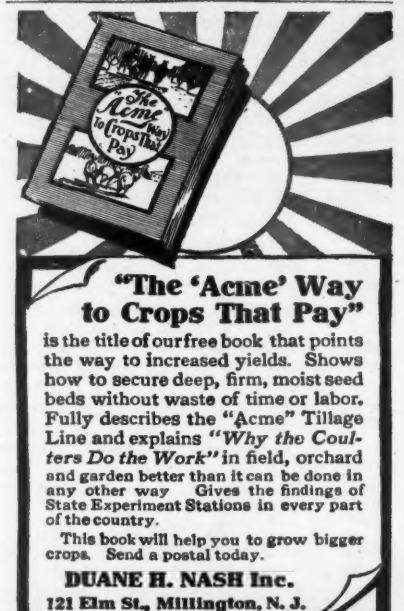
time-tried and time-tested—cut fuel cost 50 per cent, using kerosene—start as easy as a gasoline engine. 15% terms are Cash, Payments, No Money Down—30-Day Trial—5-Year Guarantee. Read my now illustrated book, "How to Judge Engines", before you choose any engine. This is a book for the farm owner as well as the shop expert. By return mail—FREE.

ED. H. WITTE, Pres.

WITTE ENGINE WORKS

2145 Oakland Ave., Kansas City, Mo.
2145 Empire Bldg., Pittsburgh, Pa.

"50"



"The 'Acme' Way to Crops That Pay"

is the title of our free book that points the way to increased yields. Shows how to secure deep, firm, moist seed beds without waste of time or labor. Fully describes the "Acme" Tillage Line and explains "Why the Cultivators Do the Work" in field, orchard and garden better than it can be done in any other way. Gives the findings of State Experiment Stations in every part of the country.

This book will help you to grow bigger crops. Send a postal today.

DUANE H. NASH Inc.
121 Elm St., Millington, N. J.

World's Best Roofing

Freight Paid

"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofing, Siding, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Positively greatest offer ever made. We Pay the Freight.

Edwards "Reo" Metal Shingles

cost less; outlast three ordinary roofs. No painting or repairs. Guaranteed rot, fire, rust, lightning proof.

Free Roofing Book

Get our wonderfully low prices and free samples. We sell direct to you and save you all in-between dealer's profits. Ask for Book No. 14.

GARAGE \$69.50 AND UP
Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book, showing styles.

THE EDWARDS MFG. CO.
104-154 7th St., Cincinnati, O.

FREE Samples & Roofing Book

WE PAY \$36 A WEEK AND EXPENSES to men with rigs to introduce poultry compound. Year's contract. IMPERIAL MFG. CO., Dept. 16, Parsons, Kans.

"Snookum Apple" Advertising Increased

R. C. Gano, Illinois

A year ago the first national advertising campaign on apples in this country was launched by the Northwestern Fruit Exchange on their "Skookum" brand, which had been advertised experimentally for three years in New York City. The national campaign was so successful that it was further enlarged this fall, the campaign starting anew (in October) with a page advertisement in black and white in the *Saturday Evening Post*. This will be followed up with color pages in *Literary Digest*, *Good Housekeeping*, and perhaps other magazines—and in selected cities intensive local campaigns will also be conducted, newspapers, street car cards, and other media being used. Mr. W. F. Gwin, vice-president of the Exchange, states the expenditure for advertising will be somewhat in excess of that for last season, which approximated about \$70,000.

A Success in Advance

The Exchange has had every reason to have its confidence in advertising increased. The 1916-17 campaign proved a consistent success even, surprising as this may seem, before it started. The campaign had been planned well in advance of its actual commencement, advertisements for the various magazines

quarters on 'practically every detail. Before the new trade-mark, for instance, the smiling little Indian imp, was accepted, fully fifty sketches by commercial artists had been submitted, and the trade-mark, as it stands today, is a composite of a number of these sketches, and has been called the equal of any nationally advertised trade-character in existence. One critic said of this attractive little Indian face, "It makes 'Sunny Jim' look like 'Gloomy Gus!'"

How Exchange Was Founded

The Northwestern Fruit Exchange was founded in 1910, being a combination of a number of smaller farmers' associations and large individual fruit growers. Today it comprises about 26 smaller organizations and handles, all told, about 25 per cent of the apple tonnage of the northwest. Probably not more than one-third of this tonnage, however, is of the extra-fancy grade which permits boxing under the Skookum label. The Exchange has done a number of pioneer things in its industry. One feature of its activities has been the issuing annually of an apple catalog listing the various brands put out by its member associations. Through an affiliation with the North American Fruit Exchange and General Sales Agency it is personally represented in every primary apple market in the United States. This personal representation, backed up by its catalog, advertising, and traveling investigators, etc., gives it a very thorough contact with the wholesale trade.

The 1917-18 advertising campaign will follow out the same educational idea as did that of the past season, emphasizing the best season for the different apples and the best uses of the varieties in the cuisine and on the table. The distribution of a handsome recipe book is one important feature of the propaganda.

BUY SPRAYING MATERIALS EARLY

Timely and careful spraying of fruit and truck crops will be of greater importance next year than ever before in the history of horticulture. Spraying will be important both from the viewpoint of economical use of materials and from the viewpoint of greatest profitable crop production. F. W. Faurot of the University of Missouri College of Agriculture suggests that orchardists and truckers prepare at once to obtain next season's supply of spraying materials. Prevailing high prices and limited supply together with the congested conditions of freight traffic make the situation trebly serious. This year in particular it will evidently be good business to buy early, and the importance of immediate action cannot be too strongly emphasized.

Organized action is necessary on the part of users of arsenicals and other spraying materials. Delay until the spraying season is on, will more than likely result in failure to obtain the needed supply. Retail quotations on arsenicals are now ranging from 50 to 100 per cent above last year's prices; and it is difficult to predict what the situation may be next spring.

Government control of the price and distribution of certain or all spraying materials is possible and may be necessary to insure the supply. The output of arsenic, in particular, is limited and precaution must necessarily be exercised in the utilization of the available supply.

Co-operative buying within and between communities where fruit, truck and other crops, (which need protection against pests) are grown will do much to control prices and insure timely delivery. If the needs of a single community are not sufficient for quantity shipments, two or more communities on the same line of railroad may co-operate to advantage.

Conservation of food stuffs is becoming more important daily. Spraying is conservation. Immediate action will insure orchard and truck crops against preventable loss.

Kindly Mention American Fruit Grower when writing to Advertisers



and car cards being in completed form and all the details worked out. These advertisement proofs were gotten up in folio form, attractively bound together, and given to advance canvassers—and the canvassers, who were expected to both investigate trade conditions and take advance orders for apples, started out to call on the fruit wholesalers of the country.

Everywhere they went they found the wholesale trade keen on the idea of a nationally advertised apple which would represent the most modern packing methods and highest quality. The proposed campaign, displayed to them in the folio form, was commended highly by practically everyone. Retailers were also called on, for the sake of securing their viewpoint and suggestions. Everywhere the keenest interest was shown. Before the campaign started these men had secured valuable suggestions and information and had actually secured orders for several hundred carloads of Skookum Apples, though prices had not yet been announced.

"I don't want to give a too gushing impression of this success," says Mr. Gwin. "There are always those who hang back, and there is always opposition anywhere you go and to anything you do. We all know that—at least those of us who have a gray hair or a furrow or two beginning to show. But we met principally with an unstinted welcome. These merchants much preferred to handle apples of dependable quality, grade and pack, even though they expected to pay more for such fruit than for the usual pack. Also they knew that the consumers would insist on having the advertised brand."

The company started on its national campaign with the greatest deliberation. Not only had they conducted their test campaign in New York, but advertising artists and experts had been called into consultation from many

GREEN'S American Fruit Grower

PUBLISHED MONTHLY BY
AMERICAN FRUIT GROWER CO., Inc.
329 PLYMOUTH COURT
CHICAGO, ILL.

Eastern Office
5 Wall Street
Rochester, N. Y.

Home Office
National Bank Building
Charlottesville, Va.

SAMUEL ADAMS, Editor and Publisher

PAUL C. STARK
Associate Editor

MARY LEE ADAMS
Associate Editor

CHARLES A. GREEN
Associate Editor

Member Agricultural Publishers Assn. Applicant for membership in the Audit Bureau of Circulation

Subscription Rates: Three years for \$1.00; or one year for 50c.
Canada, 75c per year; Foreign \$1.00 per year.

Advertising Rates: \$1.00 an agate line flat, or \$14.00 per inch.

Special Advertising Representatives

New York

Barnhill & Dempers, 23 E. 26th St.

Minneapolis

Roy R. Ring, Palace Bldg.

St. Louis

A. D. McKinney, Third Nat'l Bk. Bldg.

Kansas City

George F. Dillon, Republic Bldg.

ADVERTISEMENTS of meritorious articles needed by the fruit farmer solicited. Frauds and irresponsible firms are not knowingly advertised, and we will take it as a favor if any readers advise us promptly should they have reason to question the reliability of any firm which patronizes our advertising columns. No disguised advertisements are accepted at any price.

Communications are solicited from practical fruit farmers. Names and addresses must accompany all communications, although they will not be published if so requested. All articles and photographs used are paid for at our regular rates.

Photographs of scenes are gladly received, and will be reproduced if of general interest, and clear enough to make satisfactory plates.

QUESTIONS—Subscribers are at liberty to ask questions on any phase of fruit growing, and will be answered through the paper or by mail as promptly and carefully as possible. We do not answer questions from those who are not subscribers. When writing for information always give name and post-office address, and enclose a two-cent stamp if answer is desired by mail.

Entered as second class matter Oct. 17, 1917, at the postoffice at Chicago, Ill., under the Act of March 3, 1879.

Strategy Back Home

The dictionary defines strategy as "the science of projecting campaigns and directing great military movements." This kind of strategy is the secret of the military and naval authorities. Nevertheless, we who are back here on the producing line have a general idea of what the general staff is driving at, and some knowledge of some of the means. For instance, one object of strategy must be to direct military and naval movements toward the sources of the enemy's supplies and, if possible, cut him off from all or some of them.

During the first three years of this great war there was a general belief that the central powers would be brought to terms, not by arms mainly but by hunger, and the accepted plan was to save men and wait for our great ally, hunger, to finish its work.

Sentiment is changing. The general belief now is that we shall have to go in and whip the enemy. The necessity of whipping the enemy will prolong the war, but whether this can be done in six months or six years, it cannot be done without strategy back home along the producing line. There must be organization and direction of vast producing movements. We must turn our attention from the firing line leaving military and naval tasks to our brave soldiers and sailors and fix it upon the producing line. The object of strategy back home, of course, is to organize and to put into motion all the forces along the producing line and produce enough food and other war necessities to supply our own

needs and to supplement the productive activities of the home forces of our allies.

The line of danger, then, is not the firing line but the producing line. There is not the remotest chance of the enemy taking our allied armies. It is a waste of time to think about that. Defeat, if defeat is our destined disgrace, will be due to a break, not on the firing line, but on the producing line.

The Huns must destroy the forces back home before they can make prisoners of our soldiers and sailors at the front. And the Huns knew this before we did, for did they not try to disorganize our industrial life by means of strikes planned by their representatives in this country, and after these were banished, by alien workers whom we welcomed as men of honest purpose?

Strategy back home, then, is to make the producing line impregnable by manning, and if necessary, womaning every factory, every mine, every acre of tillable land and producing as this nation has never before produced. And while every one on the producing line is doing his level best to produce the utmost, let him at the same time do his level best to save the utmost. Producing our utmost and saving our utmost will win this war. Anything less will give the victory to our enemy.

And if we should lose it on account of the demands of labor for higher wages and the loss of time on account of strikes called to enforce these demands—What will it profit labor to gain a higher wage and lose its freedom?

A Stout Heart

Courage is the watchword of the times. To lack it in some one of its many manifestations is to be proved absolutely not worth while as an American. We who stay at home cannot hope to rival the splendor of that most spectacular form of heroism which takes men shouting "over the top" when they know there is small chance of their ever returning. Theirs is the flaming torch that flashes for a glorious hour and illuminates the page of history. Our part is less brilliant, less dramatic—if we may use such a term. Its demands upon us are incessant. We must not forget them for a moment.

Unless we belong to the wealthy classes, or to that discreditable company of nearly 8,000 persons who it is said have become millionaires during the past year, we will surely find that each day is going to make a very considerable demand upon our courage. Actual hardships may be lacking for the majority, but annoyances, anxieties, even cruel griefs are coming to all, and the measure of the steadfastness with which we meet them is the measure of what is really worth while in our make up.

Not one, even among the candy-crazy kids who at present are denied their usual allowance, but would gladly pass along his last stick to a lad in uniform. The children can be made to see their deprivations in that light, and the smile with which you bear your own share of the burden will surely radiate far and hearten others.

More difficult perhaps than such self denial is the resistance of certain special temptations to be met by the stout hearted. In your line of business there may be a chance of profiteering in a small way. Ask yourself fairly if there be any meaner disloyalty. There is the temptation of the popular man to get on the band wagon and shout louder than anyone else and to be admired for enthusiastic patriotism. That's cheap, and you know it is. There's the temptation to believe and repeat every ill-founded rumor of the brutality of the enemy. That's laying up an ugly harvest of hate with which to disfigure the lovely face of the coming peace.

The essential badness of the Teuton regime is amply apparent without our needing to resort to personal animosity to justify our cause. Have you ever had a good German or Austrian friend? Then you know that individually there must be many excellent fellows among them. Give them a show to prove later on what good is in them, and have the courage to urge others to do the same.

Then there's the temptation which almost all of us yield to, that of calling every American who doesn't hold our particular views a "coward." That's easily done, in fact it's rather hard not to do it. But just stop a minute and ask yourself if (supposing your convictions were as unpopular as his) you would have the nerve to risk the loss of friends and position and the maledictions of the public, or danger of imprisonment by speaking the truth as you see it. Call him a bone-head if you will but don't make the mistake of saying "Coward."

Lastly there's the temptation to despondency. Fight it, brother! Keep constantly in mind that this cause is worth all the sacrifice. Look ahead to the dawn of a day which shall make peace more stable than the word of the war-lords. Be glad that you are privileged to suffer even a little bit in winning so fair a future.

According to Law

Several states have already brought the apple industry within their boundaries into line with the national government with respect to the grading and packing of fruit. Recognizing the importance of uniform grading and packing throughout the country, apple growers in several of the non-regulating states are demanding state grading and packing laws.

The striking thing about these appeals to state legislatures for definition of grades is that the initiative is with the fruit growers themselves. This is a hopeful sign. It locates interest in the apple industry where interest should be most active and most intelligent—among apple growers.

This favorable sentiment among progressive apple growers is counter to the general impression, which has always been, that apple growers generally are opposed to any regulation of their industry by law. That the reverse of public opinion should prove to be nearer the truth is both encouraging and informing. Perhaps a cat is going to be let out of a bag. Who can tell?

It is known that certain classes of buyers are unfriendly to any plan for the extension of legal control of the fruit industry beyond the boundary lines of apple orchards. The ground of this opposition is probably selfishness. At any rate, the growers may safely conclude that opposition to the legal protection of apples from orchard to consumer is not inspired solely by the interest of growers. Plainly, there are apple buyers who believe that the present unregulated system of marketing apples gives them a broader freedom in the general market. They would gladly have the growers put under law; they object to having themselves put under law.

And there are growers, too, who would be glad to have the buyers put under strict laws but who do not take kindly to the thought of having themselves put under law.

Right ordains that all shall be under authority, the grower grading according to a legal standard, the buyer buying according to a legal standard.

A national grading and packing law will soon follow the state laws. Growers should unite and secure the passage of a national grading and packing law at this session of congress.

Millions of cords of wood have been wasted in this country. You may go into any wood lot and find cords of wood abandoned and decayed. But the time is near when every dead limb will be conserved as has been the practice in Europe for many years, and the old wood lot will be brought up to date and kept as clean as a fruit orchard.

A Personal Message

I desire to convey with this message the personal friendly feeling I have for our big family of readers; I do not hesitate to say that one of the characteristics of GREEN'S AMERICAN FRUIT GROWER is to bring our many thousands of readers from all over the country closer together, and from the many encouraging letters that reach the writer's desk daily goes to show that we are accomplishing our aim.

A very interesting letter, received a few days ago from one of our subscribers, prompts us to send this appeal to the rest of our readers. In this letter our friend insisted that we impress upon our subscribers' minds that now is the time to start to prepare for a larger and more productive season in 1918 than ever before. He also states that the fruit grower and farmer will be the men given credit for winning the war now in progress, and that the fruit grower and farmer must more than double their yearly output.

Our government is sending out carloads of literature every day appealing to the inhabitants of this great republic to save and conserve food stuff as much as possible. They have also proclaimed a meatless and wheatless day each week, so that we can ship more of this substantial food to our boys fighting at the front and also keep our foreign born brothers from starving.

We are all desirous to bring this war to an end and to bring our boys home safe and sound; but, in order to accomplish this we must all pull and work together like one vast army with unexcelled strength.

As a large portion of our meat and wheat will be shipped to foreign lands, this means the demand for all kinds of fruit will be greater than ever, and that every owner of a large orchard or just one tree will not be doing his duty if he does not make strenuous efforts to make same bear an abundant crop.

In preparing for this great victorious charge for a bounteous harvest in 1918 you must take into consideration that you will need a lot of advice, and someone to consult on matters you are not positive or familiar with. As our staff of associate editors from all over the country are at your command, and considering our close relation with all

experiment and horticultural stations, we are in a position to give you vital information and will deem it a great pleasure and duty if our subscribers will only call on us for such help.

Our entire editorial force is composed of plain, hard-headed everyday folks who have an enduring faith in horticulture, both as a business and for the home. They will continue to give you valuable information and solve any perplexing problems that confront you. Our editors have been fruit growing enthusiasts all their lives. With them fruit growing has been a successful business. They are editing this knowledge of successful fruit production into each timely issue, so that a strong intimacy exists between the nation's fruit growers and our publication.

I am pleased to state, that at this time I have a number of valuable articles on hand, scheduled for later issues, which have cost this company considerable money, and which are worth more to you than the price of several subscriptions to our paper. As we print only enough magazines to supply our subscribers, I would suggest that if your subscription has expired, or will expire between now and spring, to send in your renewal at once so that you will not miss any of these valuable articles which will be published in future issues.

Furthermore, I have made arrangements with the leading magazines and class publications so that our subscribers can renew all their magazines through us at wholesale or publisher's rate, which is much cheaper than if you were obliged to send your subscription elsewhere.

On page No. 18 I have published a page of clubbing offers and club list; note the big saving on these offers. If you don't find the papers desired let us know what they are as I am in a position to furnish you with any paper or magazine published.

On page No. 22 you will find a list of valuable articles which are given free to anyone who will secure us several subscriptions.

In conclusion I beg to say that these offers are only good for a limited number of days so decide on what you want and then try to secure an order from several of your neighbors or friends and receive one of

the valuable rewards, free of charge.

Taking this time to extend to you the compliments of the season, and hoping for the opportunity to serve you in 1918,

SAMUEL ADAMS,
Editor and Publisher.

HIS SMILE

He wasn't rich as far as dollars go,
He didn't have a pile of dough,
He didn't own a motor car,
He couldn't often travel far,
He couldn't dress in costly style,
He just possessed a kindly smile.

He had a happy sort of way,
Knew how to work, and how to play;
And he respected women fair
And dealt with men upon the square,
And people thought him much worth while
Because he had a kindly smile.

You do not need a store of gold
The love of real friends to hold;
Be honest, boy, and kind, and true,
And do the work you find to do;
Win openly and not by guile,
And folks will like you for your smile.

—Detroit Free Press

CULL APPLES VALUABLE

Interesting experiments and calculations relative to the value of apples as stock food have been made by J. F. Stephens of the Nampa (Idaho) district. The experiments are reported to have shown that cider from a number of varieties of apples yield as high as 15 to 16 per cent of sugar. It is also shown that 150 gallons of cider is frequently taken from a ton of such apples. It means that each ton of apples will produce from 150 to 175 pounds of sugar. Including the sugar left in the apple pulp it does not seem an excessive estimate, if these figures are reliable, to calculate 20 pounds of sugar per ton of apples. Figuring the food value of sugar for live stock is a somewhat complex undertaking, but Mr. Stephens is reported to have figured that apples at \$6 per ton make a cheaper stock food for stock that eat them than does barley at \$50 per ton.

LIME SHOULD BE ORDERED NOW

Orders should be placed at this time by planters who intend to use lime on their land in order to increase next season's crop. The manufacturers say it will be difficult to supply the demand if deferred until spring. If orders are placed at the present time they will be able, they say, to supply the agricultural needs. Lime applied in the fall or winter is as effective as when applied in the spring. Fall and winter application of lime is urged by the Department of Agriculture as good farm practice and also as an emergency war measure.

TO MY SON

(An anonymous poem sent to the Chicago Evening Post by an American mother whose boy is about to leave with his regiment.)

My son, at last the fateful day has come
For us to part. The hours have nearly run.
May God return you safe to land and home;
Yet what God Wills, so may His will be done.

Draw tight the belt about your slender frame;
Flash blue your eyes! Hold high your proud young head!
Today you march in Liberty's fair name,
To save the line enriched by France's dead!

I would not it were otherwise! And yet
'Tis hard to speed your marching forth, my son!
'Tis doubly hard to live without regret
For love unsaid, and kindness undone.

But would the chance were mine with you to stand
Upon those shores and see our flag unfurled!
To fight on France's brave, unconquered land
With Liberty's great sword for all the world!

And then the trench in battle-scarred Lorraine;
The town half burned but held in spite of hell;
The bridge twice taken, lost, and won again;
The cratered glacies ripped with mine and shell.

The leafless trees, bare-branched in spite of June;
The sodden road, the desolated plain;
The mateless birds, the season out of tune;
Fair France, at bay, is calling through her pain.

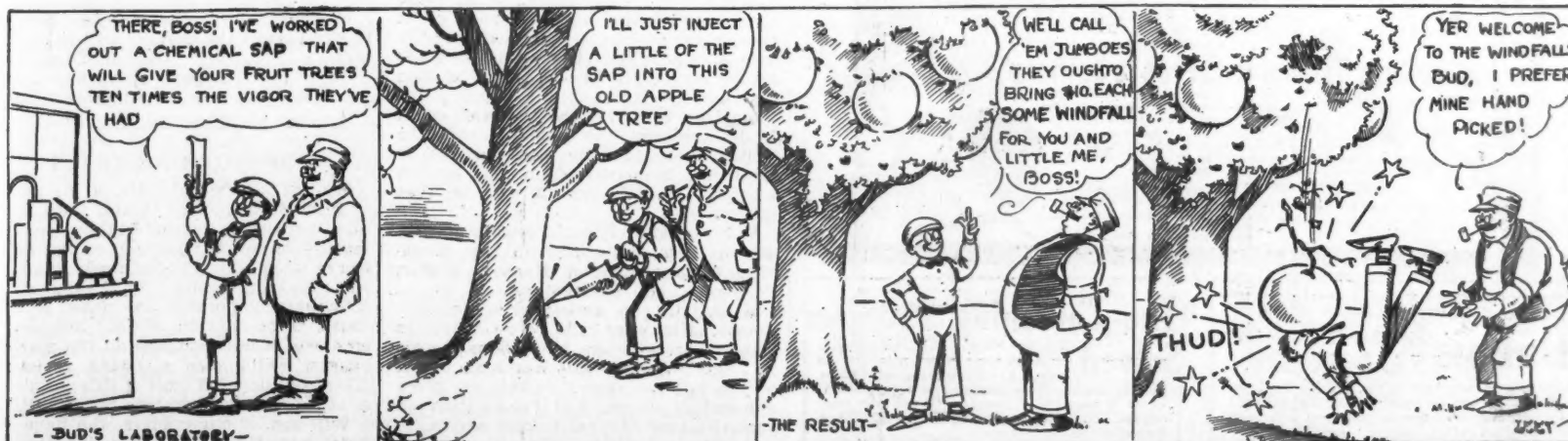
Oh, son! My son! God keep you safe and free—
Our flag and you! But if the hour must come
To choose at last 'twixt self and liberty—
We'll close our eyes! So let God's will be done!

SMALL APPLES KEEP BEST

Investigations now being made on the keeping quality of apples, show that small to medium sized ones keep much longer than the larger sizes. The necessarily rapid growth of the larger fruit produces a cell structure that is open and soft, containing a high percentage of water. So far tests on the sugar and acid content of the juice show it to be about the same in all sizes of the fruit. While the large fruit looks better now, you will do well to choose smaller ones for storing.

Never have a narrow gate for the sheep to pass through.

Adventures of Bud Pippin and Simon Spray



Simon Spray Will Have to Add a Trench Helmet to His Trench Equipment



Somewhere in America

Laying submarine cable, hundreds of miles of it, to scores of isolated lighthouses is one of the telephone tasks made necessary by the war. The Bell System has also built lines connecting some two hundred coast guard stations.

It has built complete telephone systems for fifteen National Guard cantonments and fifteen National Guard camps, each a city in size, and also at many naval, officer's reserve, mobilization and embarkation camps and at army and navy stations.

It has provided an enormous increase in long distance facilities throughout the country, that satisfactory service may be maintained between cantonments, training camps, guard outposts, military supply stations, war industries, the National Capital and other centers of Government activity.

The Government facilities at the National Capital have already been increased three-fold and there has been a tremendous increase in local and toll facilities.

Fifteen thousand miles of telephone wire have been taken from other uses for the exclusive service of the Government and some 20,000 miles of telegraph facilities also provided.

Meanwhile the Bell System has given generously of its man power, until over seven thousand men are in service or recruited for military duty.

Members of the Bell System whether they have already gone to France or whether they have stayed at their posts to help mobilize the country for victory, are equally in the service of the Nation.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy One System Universal Service

160 ACRE FARMS IN WESTERN CANADA FREE

Get under the Shower of Gold

coming to farmers from the rich wheat fields of Western Canada. Where you can buy good farm land at \$15. to \$30. per acre and raise from 20 to 45 bushels of \$2. wheat to the acre it's easy to make money. Canada offers in her provinces of Manitoba, Saskatchewan and Alberta

160 Acre Homesteads Free to Settlers

and other land at very low prices. Thousands of farmers from the U.S. or their sons are yearly taking advantage of this great opportunity. Wonderful yields also of Oats, Barley and Flax.

Mixed Farming is fully as profitable an industry as grain raising. Good schools, markets convenient, climate excellent. Write for literature and particulars as to reduced railway rates to Supt. Immigration, Ottawa, Canada, or to

C. J. Broughton, 112 W. Adams St., Chicago, Ill.	J. M. MacLachlan, 215 Trac. Term'l Bldg., Indianapolis, Ind.	George A. Hall, 123 Second St., Milwaukee, Wis.
--	--	---

Canadian Government Agent.

SPRAY YOUR ORCHARD WITH
DuBois Lime-Sulphur SOLUTION

Lime-Sulphur is the best known Fungicide; the safest and surest for San Jose Scale. DU BOIS LIME-SULPHUR in concentrated solution is guaranteed free from sediment, and not to crystallize. Manufactured by H. A. DU BOIS & SONS, Cobden, Illinois

The Threshing Problem Solved

Threshes cowpeas and soybeans from the mown vines, wheat, oats, rye and barley. A perfect combination machine. Nothing like it. "The machine I have been looking for for 20 years." W. F. Massey. "It will meet every demand." H. A. Morgan, Director Tenn. Exp. Station. Booklet 55 free.

Kayser Pao & Bean Thresher Co., Morrisstown, Tenn.

Kindly Mention American Fruit Grower when writing to Advertisers.

Up-to-Date Packing House

C. Purcell McCue, president Virginia Horticultural Society, has in Appledore Orchards, Albemarle county, Virginia, one of the most modern of packing houses. It is now some years since McCue & Son found that their former methods were unequal to handling large crops economically. During this time they have been steadily working upon ideas that would save time and labor, until now they have attained a large measure of efficiency.

The system begins in the orchard, each picker being furnished with tickets bearing his number. As soon as he fills one of the Owosso crates, No. 23, in which the apples are hauled by the orchard wagon to the packing house, he places his ticket in it for the later inspection of the orchard foreman who, with each load, receives the tickets from the loader. The men picking up in the trees are furnished with baskets which are taken from them by "nippers" and emptied into their crates. The "nippers" also place the tickets of these men in their filled crates. The ladder men and those picking from the ground use bags which they themselves empty into their crates.

Use of Record Sheets

The foreman is furnished with Orchard Record Sheets which were given to Mr. McCue by Senator Dunlap of Illinois. This sheet is about 8½ inches wide by 9¾ inches long, and is ruled both ways. There is a "total" at the upper right hand side and another at the lower edge. With the 20 numbered spaces ruled both ways across the sheet, and the different pickers' names and numbers written opposite each line, this sheet totals the number of crates per load one way, and totals each man's day's work the other way. It is Mr. McCue's practice to add the total of crates each night and divide the cost of picking, thus obtaining an accurate estimate of expenses.

How Crates Reach Grader

The loaded crates are hauled from the orchard to the packing house. There, if the fruit is being picked more rapidly than the packing crew can barrel it, the crates are stacked. If not, they are placed at once upon a roller conveyor

which runs direct from the orchard wagon to the grader.

Here girls pick out the culls and drop them into a canvas bottomed chute projecting a little on each side of the sorting table for the sorter's convenience. This chute swings under the sorting table of the grader and slopes down toward the middle, thus starting the cull upon the first lap of its journey to the basement, which it reaches by a series of zigzag chutes with canvas bottoms. By this means the speed is retarded and bruising reduced to a minimum.

The Packing House

The packing house itself is large, well-lighted, sunny and airy. The packers look as if they were on a picnic, so cheerful are they, but each one is hustling though happy.

The floor is on two levels. The upper, or stack room, supports the roller conveyor. A three-foot drop in the floor brings the end of the conveyor level with the top of the grader which stands on the lower, or packing floor. The loft holds empty barrels and barrel stock. Its flooring corresponds to the drop of the floors below, thus affording extra storage room in the deeper side. The loading platforms for full barrels are so arranged that only one man is required to load the wagons.

Basement for Culls

The basement is formed by the slope of the bank which falls away from the road in front of the packing house, and so the cellar is entered from the level of the ground on the opposite side. Here is a large table onto which the culls are gently rolled from the grader above.

These culls are not what is generally understood by this injurious name, but are, in reality, a nice grade of No. 3 apples. The true culls are picked out and thrown into great bins in the shady corner of the cellar, where they are kept for later disposal as cider stock or vinegar. The five cull bins hold 300 barrels. The whole arrangement is speedy, convenient, complete, and will save its owner many dollars.

Mr. McCue will be glad to furnish a sample Orchard Record Sheet to any fruit grower writing to him at his home address, "Appledore," Greenwood, Va.

TELL US ABOUT LURES

AMERICAN FRUIT GROWER:

Will you not call on your readers to tell us what they know about lures? I mean all kinds of lures for all kinds of beasts and birds of prey, for all kinds of pests, winged or crawling or running, as well as bearers of fur and feathers. Lures are the key to the riddance of many troubles and the avoidance of much waste. My particular need is a lure for woodrats, one that will last and not easily or soon deteriorate.

C., Washington.

CURRENTS FOR KNOXVILLE

AMERICAN FRUIT GROWER:

In response to your letter of October 1st asking for information on the currants at Knoxville, Tenn., I would say that they are not entirely successful at that place. At Chattanooga small areas have been planted but have been given up. So far as I know, this has been the case at Knoxville. Currants lose their leaves very early in the season in that region and because of this cannot make their fruit buds for the following year. If, by spraying, the leaf spot could be controlled so that the leaves might be retained I have little doubt that certain varieties could be grown with at least fair success.

For varieties, I would suggest, in order of their desirability for the Knoxville region: London Market, Wilder, Perfection, and Red Cross.

A bulletin on strawberries in Tennessee, Kentucky and West Virginia went to press before I left Washington, in July. Whether this has been issued as yet, I do not know. In that are given cultural directions and information on varieties best adapted to this region.

Another bulletin—"Raspberry Culture"—has gone as far as page-proof at least. At Knoxville, however, the "Cuth-

bert" is liked best. "Syracuse" is not hardy there. Near Nashville the "London" is liked best, and in West Tennessee the "King" is the standard variety. In southern Virginia the "Ranere" (St. Regis) is liked. This variety is grown southward in some parts of North Carolina.

A bulletin issued some time ago gives the blackberry varieties for the South. A revision of this bulletin has been made and may be issued soon. At Greenfield, Tenn., there is a large acreage of the "Early Harvest" blackberry. Carload lots are shipped. At Knoxville the "Eldorado" is the best variety, while at Nashville the "Red Cane," a local variety, and the "Eldorado" are grown. The "Early Harvest" succeeds south to the Coastal Plains and there the "Loretta" dewberry is preferred. The "Loretta" is grown south to the Georgia-Florida boundary line.

Further information on any berries in any part of the country will be gladly sent.

GEO. M. DARROW,
U. S. Dept. of Agriculture,
Washington, D. C.

TOP WORKING TREES

We are informed by Mr. S. A. Beach of Iowa State College, Ames, Iowa, that this institution is undertaking an investigation of the subject of desirable stocks upon which to top work standard varieties of the apple. This becomes increasingly important as many of the varieties planted in the old haphazard orchards cannot compete on the market against well-known standard varieties. Even well flavored fruit of this character is at a great disadvantage commercially.

Will any of our readers who have definite knowledge along this line give us the benefit of it, and also correspond direct with Mr. Beach, at Ames, Iowa?

Why orchard know h

This most they kn question answer smaller erally.

By w sider the the hoi duced \$50,000, ties agr than the value o work o and so try's fr are of r orchard of the honey h know s her pre she lite sacrifice

It is fruit ca effected, stateme makes better a

Certain sap for pendent fruitage

Let's and hea Albert Glassbor

ers of States, I bees, bu honey. inate t think of a single bees."

one of the fruit home we use of t orchards The wir locality, served t are favor crop of light.

C. J. M. extensive successfu in the v orchards number fruit the bees. H its tenth apples, a largely noticed a served a been ab neighbor falls to g times wi rows of f believes farther a accounts bor's or nated, r where s fected.

Within Experim

Bee Keeping for Profit



Conducted by E. R. Root, Editor Gleanings in Bee Culture.

Why Bees?

Why should the fruit grower and orchardist own bees—and, owning them, know how to care for them?

This question is not directed to the most successful orchard owners, for they know and know well. But it is a question that yet needs to be asked and answered by a multitude of owners of smaller orchards and fruit growers generally.

By way of answer to the "why," consider the fact that while the value of the honey and beeswax annually produced in this country is approximately \$50,000,000, yet, as the highest authorities agree, the bees contribute even more than this vast amount to the production value of our country yearly by their work of cross-pollinating fruit blossoms and so enormously increase the country's fruit crop. Strangely enough, bees are of more importance and value to the orchard owners than to the bee owners of the country, and what the worker honey bee doesn't try to do and doesn't know she does is of more value than all her precious honey and wax for which she literally wears out her wings and sacrifices her life.

It is not claimed that without bees no fruit can be grown and no pollination effected, for that would be too broad a statement. But the work of the bees makes many kinds of fruit larger and better as well as much more abundant.

Bees Necessary

Certain varieties of apples, the winesap for example, are almost entirely dependent upon the bees for the proper fruitage.

Let's call some dependable witnesses and hear their testimony in the case.

Albert Repp, of the Repp Brothers, of Glassboro, N. J., among the largest growers of apples in the eastern United States, has said: "I have an apiary of bees, but never take a pound of their honey. All I want them to do is to pollinate the blossoms. I would as soon think of managing this orchard without a single spray pump as to be without bees." At another time, Charles Repp, one of the Repp Brothers, stated that the fruit growers in the vicinity of his home were paying \$5.00 a colony for the use of the bees in the vicinity of their orchards at the time they are in bloom. The winesap is grown largely in that locality, and it has been generally observed that unless weather conditions are favorable for the flight of bees, the crop of this particular variety will be light.

New York Experience

C. J. Baldridge, Kendaia, N. Y., is an extensive grower of fruit, and, like most successful orchardists, is a firm believer in the value of bees in pollinating his orchards, and therefore owns a large number of colonies. He gets much more fruit than his neighbors who have no bees. He has a 17-acre orchard that in its tenth year produced six carloads of apples, and he gives the credit very largely to his bees. What he has noticed as to his apples he has also observed as to his pears. While he has been able to get good crops of pears, a neighbor two miles away sometimes fails to get any crop at all, and at other times will have pears only on the outer rows of the orchard. Mr. Baldridge fully believes that this is because his bees fly farther some years than usual, which accounts for the fact that this neighbor's orchard has its outer rows pollinated, resulting in a pear crop only where such pollination has been effected.

Within the last year the Agricultural Experiment Station at Berkeley, Cal.,

has made some important and interesting tests on prune pollination, near San Jose. Four prune trees were selected, and paired off, a French prune and Imperial prune tree making up each pair. These pairs were then severally covered with mosquito netting before they came into bloom. The two pairs of trees selected were as near alike as could be secured. When about 25 per cent of the blossoms were out a hive of bees was placed under the mosquito netting covering one of the pairs of two trees. The other pair of trees covered was left screened and without any bees. Under the netting containing the bees it was observed that the bees did not object to the confinement, but visited the French prune tree freely. They paid but very little attention to the Imperial prune. As soon as all the blossoms had fallen, and when there was no possibility of further pollination through ordinary means, the nets were removed from both pairs of trees. The results showed that the French prune tree that had been confined with the bees under the netting was far ahead of the tree of the same variety under the other netting from which all insects had been excluded. It bore such a crop that the limbs had to be supported with numerous props, while the French prune under the other netting from which bees were excluded bore only a very little fruit. For some reason the bees did not seem to take to the Imperial prune tree under the netting, although they visited it to some extent. As a result the Imperial did not yield nearly as much fruit as the French tree. Neither tree under the netting from which bees and other insects were excluded yielded any fruit to speak of. The French prune tree confined with the bees also yielded a much larger amount of fruit than the other trees of the same variety out in the open.

The Writer's Experience

During the season of 1917 the writer had occasion to observe a very marked case of the value of bees in a large cherry orchard a few miles distant from his home. The season was unfavorable and the crop of cherries was light. Hives of bees had been placed scatteringly throughout the orchard, and it was plainly noticeable that the trees which stood directly over a hive had heavy yields of cherries. The explanation was plain. The weather was very bad at the time the trees were in bloom. The bees were unable to fly any distance and, therefore, visited only the nearest trees. The result was that the trees in the immediate vicinity of the hives bore heavily, while those more remote from the hives bore very few cherries.

Bees and Cranberries

In the vicinity of Boston, the Cape Cod Cranberry Company are growing cranberries in a large way. When the cultivated bogs were small, it was observed that good yields of the berries could be secured; but when the acreage had been increased the crop kept getting smaller and smaller per acre. It was finally discovered that there were too few bees in the vicinity. When enough bees were put around the bogs the yield of cranberries became normal again.

More testimony of well known orchardists and many other instances like those given, could be produced to show what the bees are able to accomplish when the varieties are sterile, or partly sterile, by their own pollen.

It would be too much to say that all varieties would receive the same amount of benefit from the bees. Some kinds of fruit are fertile to their own pollen; that is to say, the wind and rain cause pollen

from the blossoms of the upper limbs to drop down on blossoms below and so pollinate them. But even then results have shown that a cross-pollination makes larger and better fruit.

Make Experiments

If any fruit grower is in doubt as to the value of bees in the orchard, let him try the experiment that has been made at the Experiment Station at Ithaca, N. Y., and elsewhere, namely: Covering a branch of some variety of apple tree that is sterile to its own pollen, with mosquito netting, tie the netting tight enough so that no insect can get at the blossoms when they come into bloom. The results of numerous such tests show that only two or three percent of the blossoms will mature on the limb so covered, while the rest of the tree will bear as usual.

The writer has traveled quite extensively over the United States, visiting many of the largest fruit orchards in the country. Some years ago there was more or less unwarranted antagonism between the beekeeper and the fruit grower, but now that antagonism has almost entirely disappeared. Instead of being openly hostile to bees as formerly, the orchardists are now asking beekeepers to put bees in their orchards.

This preliminary survey of the relation between bees and fruit production, leads up to the question: What are you going to do about it?

If you have done nothing about it and are doing nothing about it—yet want to do something, we are going to try to help you in this bee column of the AMERICAN FRUIT GROWER. We will do this by introducing you to bees, telling you about their nature, telling you where and when and how to secure them, and directing you in your first steps in beekeeping. If you want to join the beginners' class in fruit growers' beekeeping, come along. The first lesson will be given in the February number of this Journal.

Pomona Nurseries

Everything needed to beautify your home and garden, direct from Nursery at one price, 10c. One million fruit trees and shrubs to be sold under guarantee of first-class stock, true to name, free from disease, or money refunded without question. We can give highest bank references. Illustrated catalogue listing our big variety, and nothing over 10 cents. FREE.

FRUIT TREES AND SHRUBS

TEN CENTS EACH

POMONA NURSERIES, 151 Granger Ave., Danville, N. Y.

Wholesale Prices

On large orders of small fruit plants; large assortment of the BEST new and standard varieties to select from, including the BEST fall bearing kinds. 25 years experience in propagating fruit plants, and every shipment backed by our ironclad guarantee. Send today for our free catalogue, showing eight pages of berries in their natural colors.

A. O. Weston & CO. Bridgman, Mich.

Mr. Quick, of Ohio bought \$6 worth of Knights' Strawberry plants and sold his crop of fruit for \$100.

You can equal that record with Knights' plants. Send today for new catalogue of all kinds of berries.

DAVID KNIGHT & SON Box 76 Sawyer, Michigan

SEEDLESS GRAPE

The first prolific seedless grape ever originated by scientific breeding, and the only one that will grow in this climate. Send for circular.

S. W. UNDERHILL, Cambridge, Md.

Strawberries

EVERBEARING AND OTHER KINDS

Also Headquarters for Raspberries, Blackberries, Currants, Gooseberries, Grapes, Apples, Fruit Trees, Roses, Shrubs, Seed Potatoes, Eggs for Hatching, Crates, Baskets, etc. 35 years experience. Catalog free. Write today, address L. J. Farmer, Box 477, Pulaski, N. Y.

FREE

Send for circular, guaranteed 8 weeks. For selling 25 art and religious pictures or 25 pages, post cards at 10c each. Order your choice.

GATES REP. CO., Dept. 477 Chicago

SEEDS

Fresh, Reliable, Pure
Guaranteed to Please
Every Gardener and Planter
should test Our Northern-Grown Seeds.

SPECIAL OFFER

FOR 10c FAMOUS COLLECTION

1 pkg. 80-Day Tomato 20c
1 pkg. Princess Radish 10c
1 pkg. Self-Growing Celery 20c
1 pkg. Early Arrow-head Cabbage 15c
1 pkg. Fullerton Market Lettuce 10c
Also 12 Varieties Choice Flower Seeds 25c

Write today! Send 10 cents to help pay postage and packing and receive the above "Famous Collection" and our New Instructive Garden Guide.

Great Northern Seed Co.
234 Rose St. Rockford, Illinois

VICK'S

GARDEN FLORAL GUIDE FOR 1918

ITS FREE Several New Features. WRITE TODAY

Based on our experience as the oldest mail order seed concern and largest growers of Asters and other seeds in America. 500 acres and 12 greenhouses in best seed growing section. Our Guide is full of the latest information about planting, etc.—an invaluable aid to a successful garden. Illustrates and describes leading Vegetables, Flowers, Farm Seeds, Plants and Fruits. With our Guide, the best we have issued, we will gladly include interesting booklet, "A Liberty Garden." Both are absolutely free.

Send for your copies today, before you forget.

JAMES VICK'S SONS
15 Stone Street, Rochester, N. Y.
The Flower City

10 pkts. FLOWER SEEDS

Extra Special Value 10c
Mailed Postpaid for 10c

The following collection blooms from early summer to late fall: Aster, Sweet Alyssum, Marigold, Petunia, Pansy, Phlox, Poppy, Salvia, Verbena and Zinnia. Generous packets.

Complete Catalog FREE

I will mail 5 packets of Hardy Daisy Seed (five colors) for 15c, or 5 Everblooming Roses (five colors) for 25c—the 3 collections for 40c. Try them.

Miss Jessie M. Good
Box 511 Springfield, Ohio

DINGEE ROSES

Sturdy as Oaks

Pot-grown rose bushes, on own roots, for everyone anywhere. Plant and grow. Old favorites and new and rare sorts, the cream of the world's productions. "Dingee Roses" known as the best for 77 years. delivery guaranteed anywhere in U. S. Send for Our "New Guide to Rose Culture" for 1918. It's FREE.

It's more than a catalog—it's the lifetime experience of the Oldest and Leading Rose Growers in America. A practical work for the amateur. Describes over 100 varieties and tells how to grow them. Edition limited.

Established 1850. 70 Greenhouses.

THE DINGEE & CONARD CO.
Box 152, West Grove, Pa.

GRASS SEED

FREE SAMPLES

Wonderful Value Wholesale Prices Profits Divided

with customers. Don't fail to investigate these bargains. Reclaimed Tested Timothy \$3.25 bu. Clover \$14 to \$16, Alfalfa \$8.50, Alsike Clover and Timothy \$5.50, Sweet Clover and other Grass and Field Seeds at proportionately low prices. All sold subject to State or Government Test under an absolute money-back guarantee. We are specialists in grass and field seeds. Located so as to save you money and give quick service. Send today for our big profit-sharing, money-saving Seed Guide which explains all, free. Buy now and save money. Write American Mutual Seed Co., Dept. 685 Chicago, Illinois

Florida Facts Free

Things you should know about the state now contributing to the welfare of the Nation a greater variety of products than any other. Of all Florida's many great industries, citrus fruit growing is the largest. Ours are the largest exclusively citrus nurseries in the world. If you own or think of buying land in Florida, write for "Florida Facts," free.

Buckeye Nurseries
1213 CITIZENS BANK, TAMPA, FLA.

PEACH & APPLE TREES

WHOLESALE PRICES TO PLANTERS

Small or Large Lots by Express. Freight or Parcel Post. Pear, Plum, Cherry, Small Fruits, Strawberries, Vines, etc. GENUINE HALE BUDDEN from bearing J. H. HALE TREES. Genuine Delicious Apples. Catalog FREE.

TENN. NURSERY CO., Box 59, Cleveland, Tenn.

Driver Agents Wanted

Drive and demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Send for circulars and all particulars. Bush Cars guaranteed or money back. 1918 models ready to go at once for my 68-page catalog and all particulars. Address: J. S. Bush, Free Press Bldg., Chicago, Illinois

115-in. Wheelbase
Delco Ignition—Electric Start & Light
BUSH MOTOR COMPANY, Bush Township, Chicago, Illinois

Kindly Mention American Fruit Grower when writing to Advertisers



GREEN'S AMERICAN FRUIT GROWER CLUB LIST

YOUR FAVORITE MAGAZINES AT BARGAIN PRICES

Knowing the high cost of everything the publisher of Green's American Fruit Grower has gone to the trouble and extra work to make agreements with all of the leading publishers, so that we could furnish you with your favorite magazines at wholesale prices and save you money on your year's reading matter.

With this arrangement we can also save you a lot of extra work and trouble. Send your order for all magazines and papers to us. Write one letter. We will do the extra work and guarantee prompt service. Your order will be given our careful attention and magazines started at once.

Look over these "offers"—pick out your favorite magazines and mail your order today. If you fail to find any magazine desired drop us a postal card and we will quote you price by return mail. Note the big saving on each offer. Add 50c extra to your club of magazines and Green's American Fruit Grower will be sent three years, instead of one year, other publications one year.

MAKE YOUR OWN CLUBS

EXAMPLE:

Farm and Fireside	Class No. 3
The People's Popular Monthly	Class No. 7
	10
Plus	10
	20
Multiply by	5
	1.00

Correct club price for above magazines including our paper, \$1.00

Below you will find the leading magazines listed under CLASS NUMBER. These numbers indicate the class number to which these magazines belong, and that they are included in clubs at greatly reduced club prices.

TO FIND THE CLUB PRICE WHEN TWO OR MORE CLASS MAGAZINES ARE WANTED:

Simply ADD TOGETHER the class number plus 10 and MULTIPLY the TOTAL by FIVE (5). The result will be the correct club price in dollars and cents.

EXAMPLE:

The Farmer's Wife	Class No. 5
The Christian Herald	Class No. 30
Farm and Home	Class No. 3
	38
Plus	10
	48
Multiply by	5
	2.40

Correct club price for above magazines including our paper, \$2.40

Class No.	Publisher's Price	Class No.	Publisher's Price	Class No.	Publisher's Price	Class No.	Publisher's Price
25. American Boy	1.50	8. Farm Stock & Home	.75	15. LaFollette's Magazine	1.00	7. Poultry Success	.50
3. American Farming	.25	17. Farmer	1.00	100. Leslie's Weekly	5.00	7. Power Farming	.50
40. American Magazine	2.00	16. Farmer's Home Journal	1.00	60. Literary Digest	3.00	7. Prairie Farmer	.50
7. American Poultry Advocate	.50	16. Farmer's Mail and Breeze	1.00	20. Little Folks Magazine	1.50	45. Presbyterian	2.50
8. American Swineherd	.50	15. Farmer's Review	1.00	15. Maine Farmer	1.00	35. Presbyterian Banner	2.00
4. American Woman	.25	5. Farmer's Wife	.35	12. McCall's Magazine	.75	15. Progressive Farmer	1.00
72. Argosy	4.00	35. Field and Stream	2.00	15. Michigan Farmer	1.00	20. Railroad Man's Magazine	1.00
75. Atlantic Monthly	4.00	16. Film Fun	1.00	35. Metropolitan Magazine	2.00	50. Reedy's Mirror	3.00
72. All-Story Weekly	4.00	35. Garden Magazine	2.00	7. Missouri Ruralist	.50	7. Reliable Poultry Journal	.50
3. Better Farming	.25	8. Girl's Companion	.50	3. Missouri Valley Farmer	.25	50. Review of Reviews	3.00
50. Billboard	3.00	10. Gleaner	.50	23. Modern Priscilla	1.25	7. Rural Life	.50
15. Black Cat	1.00	15. Gleanings in Bee Culture	1.00	20. Motion Picture Magazine	1.50	50. Saint Nicholas	3.00
25. Boys' Life	1.50	4. Good Stories	.25	20. Munsey's Magazine	1.00	73. Scientific American	4.00
17. Boys' Magazine	1.00	7. Great Divide	.50	3. National Alfalfa Journal	.25	70. Scribner's Magazine	4.00
9. Boys' World	.50	50. Harper's Bazaar	3.00	7. National Farmer & Stock Grower	.50	55. Smart Set	3.00
30. Breeders' Gazette	1.50	75. Harper's Magazine	4.00	16. National Sportsman	1.00	6. Southern Agriculturist	.50
13. California Cultivator	1.00	4. Hearth and Home	.25	15. National Stockman & Farmer	1.00	4. Southern Planter	.25
7. Capper's Weekly	.50	7. Home and Farm	.50	6. Nebraska Farm Journal	.50	7. Southern Ruralist	.50
70. Century	4.00	5. Home Life	.35	13. Northwest Pacific Farmer	1.00	7. Southland Farmer	.50
40. Christian Endeavor World	2.00	15. Hoard's Dairyman	1.00	15. Ohio Farmer	1.00	13. Southwestern Stockman & Farmer	1.00
30. Christian Herald	2.00	20. Holstein's Friesian Register	1.00	7. Oklahoma World	.50	8. St. Louis Globe-Democrat	.50
35. Collier's Weekly	2.50	45. House Beautiful	2.50	35. Outdoor Life	2.00	13. Southern Woman's Magazine	1.00
12. Commoner	1.00	3. Household	.25	55. Outing	3.00	5. Successful Farming	.25
3. Corn Belt Farmer	.25	3. Household Guest	.25	75. Outlook	4.00	25. Sunset Magazine	1.50
55. Current-Opinion	3.00	3. Household Journal and Floral Life	.25	20. Overland Monthly	1.20	15. Swine World	1.00
12. Dakota Farmer	1.00	27. Hunter, Trader and Trapper	1.50	15. Pathfinder	1.00	54. System	3.00
25. Delinquent	1.50	35. Illustrated World	2.00	15. Patriotism Magazine	1.00	12. Today's Housewife	.75
17. Designer	1.00	6. Inland Farmer	.50	10. Pennsylvania Farmer	.75	12. Tri-Weekly New York World	1.00
27. Etude	1.50	7. Intermountain Poultry Advocate	.50	10. People's Home Journal	.75	15. Wallace's Farmer	1.00
25. Everybody's Magazine	1.50	7. Interstate Farmer	.50	7. People's Popular Monthly	.50	15. Weekly Kansas City Star	.25
7. Everybody's Poultry Magazine	.50	7. International Plymouth Rock Journal	.50	35. Physical Culture	2.00	35. Western Recorder	2.00
30. Extension Magazine	2.00	100. Judge Weekly	5.00	30. Pictorial Review	1.50	20. Woman's Home Companion	1.50
3. Farm and Fireside	.25	75. Kentucky Farmer	.50	7. Poultry Herald	.50	6. Woman's Home Weekly	.50
3. Farm and Home	.25	13. Kimball's Dairy Farmer	1.00	7. Poultry Item	.50	13. Woman's Magazine	.75
3. Farm and Home Mechanics	.25	15. Ladies' World	1.00	7. Poultry Keeper	.50	7. Woman's World	.50
3. Farm Journal	.20			7. Poultry Review	.50	13. Young People's Weekly	.75
						40. Youth's Companion	2.00

A FEW FAVORITE CLUBS

OFFER No. 1

Green's American Fruit Grower	\$.50	Our Price
McCall's Magazine	.75	
Today's Housewife	.75	
Total	\$2.00	You Save \$.75

OFFER No. 2

Green's American Fruit Grower	\$.50	Our Price
Farmer's Wife	.25	
Total	\$.85	You Save \$.15

OFFER No. 9

Green's American Fruit Grower	\$.50	Our Price
People's Popular Monthly	.50	
Woman's World	.50	
Total	\$1.50	You Save \$.50

OFFER No. 10

Green's American Fruit Grower	\$.50	Our Price
McCall's Magazine	.75	
Farm and Home	.25	
Total	\$1.50	You Save \$.50

OFFER No. 13

Green's American Fruit Grower	\$.50	Our Price
American Poultry Advocate	.50	
Gleanings in Bee Culture	1.00	
Total	\$2.00	You Save \$.75

OFFER No. 14

Green's American Fruit Grower	\$.50	Our Price
Farm and Fireside	.25	
Total	\$.75	You Save \$.10

GREEN'S AMERICAN FRUIT GROWER

329 Plymouth Court, CHICAGO, ILL.

Gentlemen:

Enclosed find \$..... for which send me the Green's AMERICAN FRUIT GROWER (one year) and the following (three years) and the following papers each for one year as per your offer.

Other papers.....

Other papers.....

Other papers.....

Name.....

Address.....

R. F. D.....State.....

The in cha or a b must l of the attack, individ grow knowle pearan a caref trol ba seldom With shippin ping p route f method ble diss be brow try. It grower every in exactly It m briefly diseases orchard common heads: tional.

Of the the mos fungus but mal and rep tage it from ot plant w It has necessar up its o sunshin inorgan root sys must ste its host, highly a as regan (1) pa plants; ing sust The vari examples wood de monly fu stumps, Many fu of the hst play life cycle found on apple, an passes th fruits and cedar tre In kee plant, th fungus called, sp spread o gists clas spore ch productio for us to carrier o light as opportu and rain, and inse crawling

To illu orchard example from a r attacked ing peach its first of for as re

How to Control Fruit and Tree Diseases

A. S. Colby, Editor of "Diseases of Fruits and Trees" Department

The progressive fruit grower, whether in charge of a big commercial orchard or a backyard garden, realizes that he must keep up-to-date in his knowledge of the diseases attacking, or likely to attack, his trees, shrubs, and vines. The individual who was formerly able to grow fruit without a pretty accurate knowledge of plant diseases, their appearance, life histories, and effects, with a carefully worked out method of control based on that knowledge, is now seldom found.

With modern methods of packing and shipping fruit, possibly diseased at shipping point, or becoming infected en route from dirty carriers, cars, or faulty methods of inspection, the widest possible dissemination of plant diseases may be brought about throughout the country. It, therefore, behooves every fruit grower to acquaint himself fully with every important plant disease, and know exactly how to control it.

It might be well at this point to briefly summarize the classes of plant diseases likely to be met with in the orchard and fruit garden, and which are commonly placed under one of these heads: Fungus, bacterial, and constitutional.

Classes of Plant Diseases

Of these, fungous diseases are by far the most common and important. A fungus is a plant, microscopical in size but making up in activity of growth and reproductive power any disadvantage it may otherwise have. It differs from other members higher up in the plant world in one essential, however. It has no leaf green or chlorophyll, a necessary agent for a plant in making up its own food with the aid of air and sunshine in its leaf tissues, from the inorganic materials brought in by the root system. The fungus, therefore, must steal its food from another plant, its host, an art in which it has become highly adept. Fungi are of two groups as regards their choice of host plants, (1) parasites, those living on live plants; and (2) saprophytes, those gaining sustenance from dead plant tissue. The various rots, rusts, and mildews are examples of the former, while many wood destroying fungi, such as commonly found on dead tree trunks and stumps, illustrate the latter group. Many fungi are found on different parts of the same tree or even on different host plants at different stages in their life cycle, examples being the black rot found on leaves, twigs, and fruit of the apple, and the apple or cedar rust which passes the summer on apple leaves and fruits and is found on the twigs of the cedar tree in winter.

In keeping with its character as a plant, though exceedingly minute, a fungus bears seeds, or as they are called, spores, a common means for the spread of the disease. Plant pathologists classify fungi on the basis of their spore characters and method of spore production. It is, however, significant for us to realize that the spore is the carrier of the disease, and tiny and light as the spore is there are abundant opportunities for its dispersal by wind and rain, as well as by the feet of birds and insects and the bodies of worms crawling from place to place.

An Example

To illustrate the ease with which an orchard may become badly diseased, an example may be given. Across the road from a neglected cherry tree regularly attacked by brown rot may be a thriving peach orchard just ready to produce its first crop. The trees are well cared for as regards pruning, cultivation, and

fertilization, but not as yet carefully sprayed. On some cloudy July morning a thick coating of brown powder appears on some of the cherries on the neglected tree, and a little gust of wind carries a few of the spores from the millions making up the powder, across the road to the healthy trees, carrying their load of fruit. If there is any moisture on the peaches, such as dew or raindrops, the spores will germinate at once.

This point needs emphasis here—moisture is absolutely necessary to germination. We can thus see how important careful pruning and thinning of the fruit are. With the trees opened up sufficiently to the air and sunshine, surplus moisture is prevented from remaining long on the inside of the tree. Judicious thinning, so that the fruits do not touch each other, removes the possibility of the spread of rots by contact of diseased with healthy fruits, a common occurrence where no thinning is thought necessary.

Provided that the requisite moisture is present in dewdrops on the peach, then, the spore germinates, sending its little rootlike organs into the pulp of the fruit and growing in all directions. In a few hours the fruiting stage appears, evidenced by the sending out of little tree-like structures from the surface of the fruit on which are borne countless numbers of brown spores ready for dispersal from this new infection center, and the life cycle is complete. The life history of brown rot is fairly typical of that of any fungus, the main difference being in the time necessary for the completion of the life cycle.

Important Points

The important points to note here are that fungi are spread by spores, and that we must realize that the spore stage is the vulnerable one in their development. We cannot hope to control brown rot or any other rot by spraying with any material, however strong, after the disease has gained a foothold inside the host, that is, after the spore has germinated. Our concern, therefore, is to prevent the germination of the spore.

We are confronted here by a seemingly serious question. If both the fungus and its host are plants, how can we hope to kill one by application of poison without injuring the other? The answer is that, fortunately for us, we are able to kill the fungi with a solution the concentration of which is not strong enough to injure the host tissues unless under some peculiar meteorological conditions prevailing, when lime sulphur and bordeaux cause some fruit and foliage injury. We, therefore, spray as a preventative, never as a curative for the control of fungi. The object is to have susceptible fruit and foliage covered with the fungus killer, or as the material is generally called, a "fungicide," throughout the season. The fungicide is, therefore, ready to kill the spores as they light on the host and start to germinate, the spray affecting the little rootlike germinating tube of the spores by its caustic action.

The statement cannot be too strongly made and emphasized in this connection that the protective fungicidal coating must be present on all susceptible parts of the host plants throughout the growing season. Storms will wash off part of the spray after it dries on and the fruit and foliage will increase in size after the first one or two applications made, necessitating the use of the spray outfit intermittently during the summer months.

The fungicides now recognized gener-

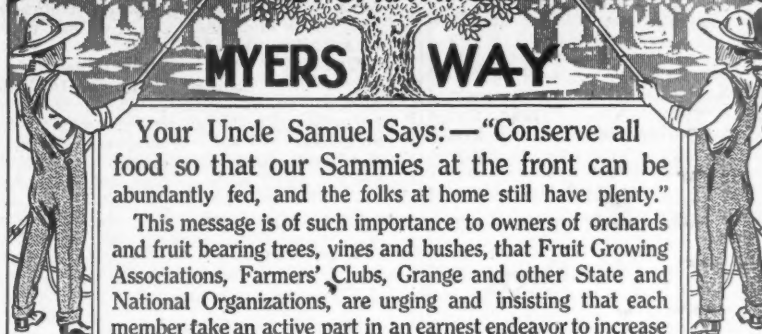
MYERS SPRAY PUMPS

KILL

THE PESTS THAT EAT YOUR PROFITS

SAVE YOUR CROPS BY SPRAYING

MYERS WAY



Your Uncle Samuel Says:—"Conserve all food so that our Sammies at the front can be abundantly fed, and the folks at home still have plenty."

This message is of such importance to owners of orchards and fruit bearing trees, vines and bushes, that Fruit Growing Associations, Farmers' Clubs, Grange and other State and National Organizations, are urging and insisting that each member take an active part in an earnest endeavor to increase and improve his fruit and vegetable crops for 1918, and thus

place within easy reach of the general public such fruits, berries, and vegetables for preserving, canning, drying and bin storage, as will take the place of grains and other food supplies that are easier to ship and transport.

MYERS

Says—"Good Gospel—Follow it to the letter." It will pay—Pay in the satisfaction of knowing you are doing your part—Pay in a more material way through larger crops and better prices. So prune your trees and spray them MYERS WAY with a Myers Knapsack, Bucket, Barrel or Power Spray Pump or complete Spray Outfit. You will know your spraying work will be done right, for Myers Spray Pumps—All Styles—All Sizes—are tried and proven. They get spraying results many times where others have failed by killing the numerous pests which attack your trees and eat your profits.

Write for late catalog—54 pages—devoted to MYERS SPRAY PUMPS, NOZZLES, HOSE and ACCESSORIES for Spraying, Painting and Disinfecting—and be ready for action when Spraying Time comes around.

F.E. MYERS & BRO.

No. 150 ORANGEST, ASHLAND, OHIO.



SPRAY Your Fruits and Vegetables with an **Eclipse Spray Pump**

THE FIRST SUCCESSFUL
SPRAY PUMP MANUFACTURED

For 28 years we have been supplying fruit growers with spraying utensils. One of our largest customers is the U. S. Government. Could there be a better endorsement? Send for our free literature and get our special proposition—a liberal one.

MORRILL & MORLEY MFG. CO.
BENTON HARBOR, MICH., Box 13
First in the Field with a Successful Spray Pump



Build with Natco

A Hollow Tile that's fire-safe, wind, weather and vermin proof. Natco buildings "Last for Generations"—save painting and repairs. The glazed walls are as easy to keep clean as the household crockery. Reduced repair, coal and insurance bills make Natco buildings truly economical. Ask your building supply dealer for free building plans, but write direct for new illustrated "Natco on the Farm" book—1918 Edition—It's free!

23 Factories assure a wide and economical distribution.

National Fire Proofing Company, 1158 Fulton Bldg., Pittsburgh, Pa.

ROSES of NEW CASTLE

is the title of a beautiful book on the culture of roses and other plants: gives expert experience of a lifetime. It's free. Exquisitely illustrated in natural colors; offers and tells how to grow these famous plants. Write for copy today.

KELLEY BROS. CO., Box 140, New Castle, Ind.

SEEDS Platte Valley Peerless

—the Best Seeds Grown

I want you to have that kind. 5 packets, Royal Aster, Mammoth Verbena, Monstrous Poppy, Marigolds, Pinks and Glory Flower, 10c. 5 packets Vegetable Seeds, 10c. 5 packets Fruit Seeds, 25c. Catalog, Giant Penny and 10 sorts Spencer Sweet Peas, 3c.

Send today **A. C. ANDERSON, Box 85, Columbus, Neb.**

ally as standard include lime sulphur, self-boiled lime and sulphur, and bordeaux mixture, each one of which is useful in certain situations and at certain times in the season.

Buy Spray Materials Now

Anticipate your spray material needs and secure your fungicides at once. It will be a question not of price, but of even getting many materials at all, especially arsenical poisons, next spring, as the government will be using more and more in the prosecution of the war.

Will black locusts interfere in any way with fruit trees causing diseases?

C. A. W., Iowa.

Answer.—There is no known disease likely to spread from black locust trees to neighboring apples. There is a bare possibility that certain little-understood root rots may be carried through the soil from the locust trees to the orchard trees, a condition, however, possible where any considerable number of forest trees is in close proximity to an orchard.

SAVE

Why pay a middleman's or agent's profit when it is unnecessary?

In buying trees direct from our nursery, you will get reliable, true-to-name stock, free from any disease, and strongly guaranteed. You will get more prompt delivery, and effect a bigger saving.

You'll never regret buying.

Kelly Bros.'

trees. Each of the five Kelly Brothers is in charge of a department of the nursery. If something goes amiss it means money out of that brother's pocket. He alone is responsible for the conduct of his department and the quality of his product.

The Kelly policy is The Customer First

and that policy has made a host of friends.

If you would like to experience Kelly Service, write for our new catalog. It is full of interesting information, and 1918 prices.

Send a post card now.

KELLY BROS.

Wholesale Nurseries

10 Main St. Dansville, N. Y.

MONEY



Everbearing Raspberry

Raspberries for 4 months with this wonderful new Everbearing St. Regis, of the highest grade. It's the first to bear and continues until late October. Very hardy, yields first season, 8c each; 10 for 60c.

Beebe's Early Prolific Tomato

Two weeks earlier than any other. Bears until frost. Fruit large, smooth, superb quality, splendid keeper. Stands hot dry weather. You will never regret planting it. Seed cannot be obtained elsewhere. Fruit trees, vegetable and farm seeds. Catalog free.

Sonderogger Nurseries & Seed House
31 Court Street BEATRICE, NEB.

Trees and Seeds That Grow

Seeds - Plants - Trees

From One Firm—On One Order

You can get everything required for garden, orchard, lawn or greenhouse use from one concern on one order. We sell direct—no agents—postage paid and delivery guaranteed.

STORRS & HARRISON Seed and Plant Annual

explains our complete service. 192 pages of information about vegetable and flower seeds, fruit and shade trees, evergreens, roses, shrubs—everything needed for a successful garden or a beautiful home. Send for our catalogue today.

Storrs & Harrison
Box 651, Painesville, Ohio

THE FEIJOA

Miss Delphia Phillips, California

One of the semi-tropical fruits that deserves to be better known is the Feijoa (pronounced fay-zho-a) popularly called pineapple guava. The shrub that bears this fruit grows from eight to ten feet high, and is found in the south of France as well as in southern Mexico, whence it brings its Spanish name. It is said to have originated in South America. I think it must have an affinity for our country after all, for it puts forth its delightful blooms in colors of red, white and blue. Could we ask more of an alien plant?

The flavor of this guava is peculiarly fascinating. Tasting it, one can imagine Mother Nature taking of the mellow, yet refreshing, taste of the pineapple, the richness of the Avocado (alligator pear), the pungency of the strawberry guava, and, with a dash of sassafras,



Box of Feijoas

added out of pure daring, compounding a strange new blend of flavors in this one fruit.

The Flavor Grows

My first taste of the Feijoa reminded me of my first glimpse of French millinery. It was before the days of daring contrast and color combinations, and I distinctly remember being first shocked, then interested, then fascinated by the wedding of hues which custom had, thus far, deemed utterly incompatible with each other.

It was the surprising hint of sassafras in the Feijoa that first shocked, then fascinated, my sense of taste by the very daringness of such an innovation in flavors. I ate one hesitatingly, then another and another. The Feijoa is the sort of fruit that the more one eats the more one wants. The peculiar blend of unusual flavors grows on the palate. There is also just a hint of the quince in the blend and as I investigatively chewed a piece of the rind—which, of course, is not meant to be eaten—I seemed to perceive a ghost of some other flavor. It appeared to be nutmeg, but I could not be sure.

It is just these haunting ghosts of flavors that lend such enchantment to the Feijoa. One is forever thinking it tastes like this, or like that, and never quite determining just what the elusive quality is before that particular specimen is eaten and another one begun. True, some people do not like them at all, but they seem to be in the minority.

Where it Thrives

This fruit, small and insignificant in its native state, has been brought to a large size and a high state of development under the cultivation of William Boyes of Lomita, California, a locality about midway between San Pedro and

Redondo. Mr. Boyes has probably the largest number of the bushes found in any one group. They number 220, and the fruit is unusually large and fine; many of them attaining a circumference of five inches or more and about two and a half inches in length.

The fruit ripens in October, falling to the ground when ripe. It is then picked up and laid away several days before it is ready for use.

Some Characteristics

The bushes begin to bear when three years old, and yield on an average of from one hundred to three hundred pounds of fruit per bush. The soil best adapted to their culture is a light loam.

The richness and spiciness of this fruit, and the absence of seeds, render it particularly agreeable in salads. It also makes excellent jams and jellies.

The firm, green rind of the Feijoa makes it possible to ship it from California to New York in fine condition, and one can hardly help predicting that this easily raised and really delicious fruit will be popular both in eastern and western markets when it becomes better known. The market here is fairly active but it is still a comparatively unknown fruit even where it is raised.

Is Quite Hardy

More recent investigations have discovered the fact that the Feijoa, which was classed as a sub-tropic fruit, is really quite hardy, growing fruit of good size in a temperature of five degrees above zero, and also in 115 degrees of heat, and with little water. I am, therefore, inclined to think it can be grown successfully in many parts of our country.

Mr. Boyes, who has some of his fruit on the Long Beach markets, is constantly besieged by the passing throngs with questions about the queer, new fruit. Specimens of his growing were taken to the Panama California Exposition for exhibition.

Professor Condit of the Experimental Station of the University of California at Berkeley, sent to Mr. Boyes for samples of the Feijoa for the exhibition of tropical fruits held there.

Many visitors to the place from various localities also attest the keen interest shown in this fruit of whimsical flavors.

WASHINGTON'S PEACH ORCHARD

On March 18, 1776, George Washington leased to one William Bartlett 125 acres of land, "in the barrens of Bullskin," a part of the present Berkeley Co., W. Va., says the *Wisconsin Horticulturist*.

The grantee was "to have and to hold (the land) for and during the lives of the said William Bartlett, Mary, his wife, and Frederick, their son, and the life of the longest liver of them." In addition to six pounds annual rent, it was agreed that Bartlett should leave a certain area of timber untouched, erect the buildings, raise 10 acres of "English Grass" and "that within seven years an orchard of 100 winter apple trees, at forty feet distance every way from each other, and that one hundred peach trees shall be planted on some convenient part of the said demised land, and the same to be kept always, during the continuance of said term, well pruned, fenced in and secured from horses, cattle and other creatures that may hurt, and if any of the said trees shall die, decay or be destroyed, that others of the same kind shall be planted in their place, and the entire number thereof be kept up during the said term."

This orchard of 200 trees is supposed to have been the largest orchard of its time.

It is interesting to note, further, that the site selected by Washington for his orchard has since become one of the largest fruit regions of the state. "Apple Pie Ridge" boasts of one orchard with a record of 600 barrels per acre.

There is a big demand for hogs for breeding purposes at the present time. Breeders at the fairs have been taking orders for as much as a year ahead. Get in position to get some of this sort of prosperity for yourself.

MAULE'S SEEDS

Once Grown Always Grown

Insure success in your garden. Each lot of Maule's seeds is tested for vigor and growing power, and is backed by our 41 years' success as seed growers.

THE MAULE SEED BOOK

176 pages full of valuable planting and gardening information FREE

Send for it today. Include 10c and we will send you a packet of specially selected pansy seeds—a generous assortment of beautiful Giant pansies—the largest known.

You save money and get fresh seeds when you buy from WM. HENRY MAULE, Inc. 2122 Arch Street Phila., Pa.

OLDS' Seed Book

and Packet Flower Seed FREE

FOR 30 years I have sold reliable seeds. Thousands of customers testify to this. My seeds not only grow, but produce big yields. They must make good or I will. 31st annual catalog now ready. Write for copy.

Lists All Kinds of Farm Garden and Flower Seeds

The best arranged, most comprehensive and easiest catalog to order from ever issued.

A few specialties are: Certified Seed Potatoes Wisconsin Grown Seed Corn Pedigreed Oats and Barley Wheat, Speltz, Rye, Buckwheat Northern Clover and Alfalfa Tested Garden and Flower Seeds Send postal today. Mention this paper. Will include packet flower seeds. L. L. OLDS SEED COMPANY Drawer 68 MADISON, WIS.



LIVINGSTON'S FAMOUS Tomatoes

Give satisfaction. Stand for high yield and quality. We originated sorts for all purposes and all tomato growing sections. We grow more tomato seed than any seedsmen in the world.

TWO BEST VARIETIES
Livingston's Globe, finest pink for slicing and shipping, pkt. 5c.
Livingston's Stone, finest bright red, for canning and eating, pkt. 5c. Both immense yields. Try them.

New 112-Page Catalog FREE

One of the finest seed catalogs published. Gives truthful descriptions and helpful cultural directions of the most reliable sorts of vegetable, flower and field seeds. Tells when to plant and how to grow big crops. Write for Free copy.

Livingston Seed Co. 644 High St. Columbus, Ohio

BALDWIN'S EVERBEARING STRAWBERRY PLANTS

That there is money in Strawberries no one will deny. There is more money in growing them four months in the year. A full crop this fall from plants set this spring. If you start right with Baldwin's vigorous plants, you will succeed. They are large, hardy, northern grown in new soil, heavily rooted—the sure grow kind.

Our Money Back Guarantee

protects you. All plants are first class, true to name, packed to reach you in good condition (by express) and to please you, or we pay you back. Send for our new Berry Plant book. There are special features in it of value to you. Raspberries, Blackberries, Currants and Grape Plants—Baldwin quality—are listed. We will start you right. Write tonight.

O. A. D. Baldwin, R. R. 11, Bridgman, Michigan

CONDON'S NEW EVERBEARING TOMATO

"Queen of the Market" Big Money Maker. Large cold fruit excellent summer. To introduce to you our Northern Grown "Sure Crop" Live Seeds, we will mail you 125 seeds of Condon's New Everbearing Tomato. Write for it today. Tell how, when and where to plant for pleasure and profit. Send postal today. CONDON BROS., SEEDSMEN 804 North Valley Seed Farm BOX 926 ROCKFORD, ILLINOIS



Tractors Trucks and Engines



Trucks Speed Up Work

In a little town in the fruit belt of Michigan, of a Saturday afternoon, a few weeks ago, there stood in the late afternoon some fifty automobiles and motor trucks. This was a country town of only 1,000 inhabitants, but the predominance of motor cars and the few horse drawn rigs evidenced the situation in that part of the country.

There was a time when farmers were busy getting their farms cleared up from the stumps which dotted the entire country. There was a time when a farmer walked half a mile to use a telephone, because the telephone had not become recognized as a universal need. There was a time when all the work of the farm was done by muscle power—human and horse. The gasoline engine has changed that.

Trucks on Fruit Farms

And now we are in the day of the motor truck on the farm, the fruit farm even more than the general farm. It is being adopted everywhere, because it is shown over and over that one truck will

and load capacity of the trucks made them veritable giants in transportation.

Never Gets Tired

There is no such thing as maximum efficiency in a horse or team. A single horse or team will pull a certain load for a certain time and then it's through. A motor truck is never through. It can work 24 hours of the day and needs only oil, gas and care to keep on steadily. The farmer uses his truck to improve his roads, to improve the speed of his trucks. The fruit grower needs the truck for quick dispatch of his perishable products. Fruits must be moved quickly to meet the market need. The truck gets them to market or shipping points in fresh condition not possible when horses are used.

The huge crops of potatoes could never be moved by horse alone. Think of 200, 300—even 400 bushels to the acre and haulage to town to dealers or shipping points. The truck picks them up in the field, crated, moves over the rough ground and out to town, and is



Trucks Are a Profitable Investment

do more work than six teams and costs less. The higher price of horse feed is another factor tending toward the universal use of trucks on the farm.

The truck is an all-around farm hand. It will haul produce to town, supplies back, help to build roads, carry manure into the fields, pick up produce in the fields and carry it to storage, carry live stock to market, do any one of the thousand things that heretofore required slow, horse-drawn vehicles and much hand labor.

The day will come when every farm and country road will be dotted with smooth running motor trucks. Instead of the horse, who is only 20 per cent efficient, based on the heat energy of meals eaten as transmitted into draw-bar pull, the motor truck transmits nearly all the heat energy of its gasoline meals into service. Moreover, the speed

unloaded before a team would be started on its way. Day and night the truck can run at such a period, taking care of unusual production, while teams of horses, no matter how many, would be fagged out in a short time.

The progressive fruit grower recognizes that the motor truck is a vitally important factor in his success. It is one of those time-saving, labor-saving devices that he may postpone getting, but at cost to him. "If you have use for a truck—and every farmer has," said a wise old farmer, "you are paying for a truck whether you use it or not."

Here is a truck saving big expense for a fruit grower by doing the work of many horses. It makes one haul of a load that would require several wagons, and it gets the produce to market or shipping point in fresh condition. Speed is a big factor of success these days.

KEEP TRACTOR IN ORDER

The tractor is as responsive to good treatment as an animal or any other machine. In the case of a great many machines the response to good treatment is not so noticeable. This is true because the tractor is a power-furnishing machine while the average farm machine consumes power. If the tractor is not just right in every way, it falls short in the production of power. This is sure to be very noticeable, as it is usually pulling a full load and only a small loss in power cuts down the amount of work done.

In the case of the power-driven machine, any disorder calls for greater power to operate it. The horses or the machine furnishing the power work

harder and approximately the same results are accomplished. Hence it is much easier to overlook a slight indisposition on the part of a power consuming machine than on the part of the power producer.

Examine Machine

If any part through which power is transmitted is loose, it may cause a reduction of power. The tractor operator should examine his machine thoroughly every week or ten days to prevent such loss. A bolt in the crank case is loose, oil is lost. The adjustment on a valve stem loosens, the valve is out of proper time and the cylinder does not give full power. The clutch is not adjusted to take hold evenly. Slippage here causes

loss of power. Similar leaks may develop in the fuel system and the ignition system. Any of these cause heavy drains on the power. Usually they can be quickly repaired if attended to early. Left too long, they may result in a breakdown involving a large repair bill and loss of much valuable time.

The throb and rhythm of the tractor should be a part of the operator so that he detects the trouble in its earliest stage.

WILL THE FARM TRACTOR WIN THE WAR?

It is entirely possible that the winning of the great war may yet hinge upon the ability of the American farmer to greatly increase crop production. We must not only feed our own people at home, but our non-productive armies in the field and at the same time provide an enormous surplus to sustain our allies.

In this emergency the farm tractor comes like a god-send to the nation. The successful development of the farm tractor seems to have been providentially timed to meet the crying need for more help and more power on the farm; so the American farm tractor may yet win this war—not alone as armored tanks crawling across shell craters, cutting through barb wire entanglements and dealing deadly broadsides at the enemy, but here on our American farms turning two or three furrows where only one was turned before, cultivating two acres where only one was cultivated before, and harvesting the yield of the fields on time and with a great saving of hand labor.

Investigate Tractors

It is time every American farmer awoke to the possibilities and efficiency of the improved tractors of today. Don't make the mistake of disparaging all tractors because some have failed to do what was expected of them—don't judge the light, one-man, all purpose tractors of today with the clumsy, heavy, pioneer machines that were adapted only to long stretches of level acres in the northwest grain belt.

The tractor of today is a proven success on thousands of farms. There is not alone one type, but several—all of which have their advantages—all of which do good work and some one of which is exactly suited to your needs. For example, if you work a farm of only 80 acres, there is at least one efficient type that will do all your farm work without horses. A tractor that is light, easy to handle, economical to operate and low in first cost.

Write for different tractor catalogs. Study the maker's claims for each. Note the advantages each would have when applied to your own farm problems. But our recommendation to every farmer is to investigate farm tractors—now. War or no war—power farming is here to stay and the most successful farmer of the future will be the one who like the successful manufacturer installs the latest and most efficient machinery. And the most vital of all machines in these days of scarcity of hired help and increase of power requirements is the light farm tractor.

EIGHT WAYS TO SAVE GASOLINE

Mr. Mancius S. Hutton, laboratory engineer of the Automobile Club of America, gives the following rules for the guidance of motorists:

1. Do not allow the engine to run idle except when absolutely necessary.
2. Run the car on a lean mixture.
3. Prevent leaks in the gasoline line and shut off gasoline at the tank whenever possible.
4. Keep the motor free of carbon. A carbonized motor is a large consumer of fuel.
5. Change gears more frequently in order to run the engine at high, economical and efficient speed.
6. Keep the moving parts well lubricated.
7. Keep tires properly inflated.
8. Use kerosene for cleaning instead of gasoline.

City consumers will be glad to buy your wife's surplus canned goods.

TRACTOR DEMONSTRATION

A meeting of the National Tractor Demonstration Committee was recently held for the purpose of discussing the question of tractor demonstrations for next year.

After a very thorough discussion of the subject a motion was made and carried to have one big national tractor demonstration in 1918, incorporating:

1. Tests on fuel consumption in plowing, disking and other kinds of field work.
 2. Tests on different types of traction wheels, wheel equipment and on tractive efficiency. To include tests running wheels in furrow, on unplowed ground, and also on plowed ground.
 3. Tests on steering mechanism.
 4. Tests on belt work.
- The committee is of the opinion that this demonstration carried out on the lines above mentioned, should be one which will better establish the farm tractor and help develop the tractor industry.

This demonstration is planned to give those interested more detailed information as to fuel traction and power.

At least one ten-hour plowing run will be held during the demonstration.

It was further decided that the committee may sanction not more than five other demonstrations, at points to be decided later which would be conducted along the lines of previous demonstration, but not include any tests.

It was the consensus of the committee to hold this demonstration at some point in the vicinity of Detroit or Cleveland, if suitable land can be found; three thousand to five thousand acres will be required in one body, or made up of adjoining fields.

THE STANDARD BARREL

The so-called federal standard barrel law was passed by an act of congress March 4, 1915, and went into effect July 1, 1917. Recently the department of commerce has issued rules and regulations promulgated under this law and every man who sells commodities by the barrel should acquaint himself with them. The penalty for violation of the law is \$500 or imprisonment for six months.

The capacity of a standard barrel for fruits, vegetables and other commodities, except cranberries, and its subdivision, follow:

Size	Cubic inches	Bushels	Qts.
Barrel	7056	3.281	105
¾ barrel	5292	2.461	78¾
½ barrel	3528	1.641	52½
¼ barrel	2352	1.094	35

Bushels and quarts refer to "struck measures."

Lime is not included under the above provisions, as a special law governing barrels of lime, which are sold on a weight basis, was passed August 23, 1916. Commodities sold on a weight or numerical basis are also not included within the purview of this law.

The regulations governing the size of cranberry barrels are as follows:

Size	Cubic inches	Bushels	Quarts
Cranberry barrel	5826	2.709	84-65-64
¾ cranberry barrel	4369.5	2.032	65 1-64
½ cranberry barrel	2913	1.355	43 11-32
¼ cranberry barrel	1942	0.903	28 29-32

The law also regulates the shape of barrels, which must conform to the following:

Dimensions	Standard barrel	Cranberry barrel
Diameter of head	17½	16¾
Effective diameter of head	16¾	15¾
Distance between heads	26	25¾
Circumference of bulge, outside measurement	64	58½
Length of stave	28½	28½

It will be noted that a standard barrel is provided for fruits, vegetables and other dry commodities, and for cranberries; also that three subdivisions of three-fourths, one-half and one-third of the full size are recognized.

Buy a gasoline engine and work up a year's supply of firewood during the winter. Then you will not have to stop pressing farm work next summer to get up stovewood for the good wife.

When hog-killing time comes, spare the sow!

EXCEPTIONAL VALUES FOR CLUB RAISERS

We present herewith our new REWARD LIST for your consideration. You all know the high prices which now prevail. This company was fortunate to foresee the advance in prices, and placed a large order for the different rewards offered below, this enabling us to give our subscribers the benefit of these exceptional prices. Did you ever receive one of our rewards? It's never too late to begin, as thousands of old subscribers can testify. Some of our old subscribers send in a club each year with their own renewal—they find it pleasant work and profitable. It is easy to interest your friends and neighbors in our subscription prices of only 50c for one year or \$1.00 for three years. Show them a copy of our magazine, getting two or three subscriptions from your friends in addition to your subscription will bring most any of these rewards to you free. Start out at once, send all orders to

GREEN'S AMERICAN FRUIT GROWER, 329 PLYMOUTH COURT, CHICAGO, ILL.

COASTER SLED

Here it is! A "Jim Dandy" Coaster Sled for our boys and girls. Something you have been wanting a long time. The sled is made of good quality second-growth ash, natural finish, varnished and striped; special T-shaped steel runners; heavy pressed steel knees; all parts strongly riveted; all metal parts enameled in vermilion color; strong steering bar convenient for hands or feet.

Reward No. 101—Coaster Sled sent by parcel post for sending us five subscriptions to Green's American Fruit Grower at regular rate { one year . . 50c three years \$1.00

ICE SKATES



Boys, here is a pair of skates to be proud of. They are lever clamp, blued steel foot plates; polished lever, cast steel runners, polished and hollow ground, set and sharpened, all ready to use. Sizes: 8, 8½, 9, 9½, 10, 10½, 11, 11½, 12 inches.

Reward No. 102—Ice Skates sent by parcel post for sending us five subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

EASY OPENER KNIFE



Has two blades, 1 large spear point and 1 pen; half polished, German silver bolster, cap and shield; brass lining.

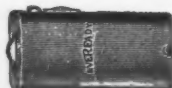
Reward No. 103—Easy Opener Knife sent by parcel post for sending us three subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

PRUNING SHEARS

Heavy malleable iron frame, with end catch and carefully ground hook, polished center and hook; plain tightening nut; nickel-plated steel nesting coil spring; special crucible steel blued blade, riveted on, carefully ground and sharpened; length over all, 9 inches; blade 3 inches long; handle 4 inches long.

Reward No. 104—Pruning Shears sent by parcel post for sending us six subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

FLASH LIGHT



Convenient to carry in the pocket. Wrought brass case, nickel-plated and polished; permanent or intermittent slide contact case, 3¼ inches wide, ¾ inch thick, complete with Mazda bulb No. 1180 and one "Three Crescent" battery No. 850.

Reward No. 105—Flash Light sent by parcel post for sending us two subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

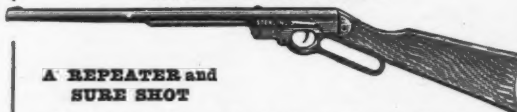
FOOD CHOPPER



A very useful article and should be in every home. This food chopper has bell-shaped barrel, straight cutting ribs, with stationary cutting teeth on inside of barrel. Each chopper furnished with four cutting plates, one of these being reversible, thus making five different cutters; made of extra quality hardened steel. Full directions how to operate and one cook book sent with each chopper.

Reward No. 106—Food Chopper sent by parcel post for sending us six subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

500 SHOT AIR RIFLE

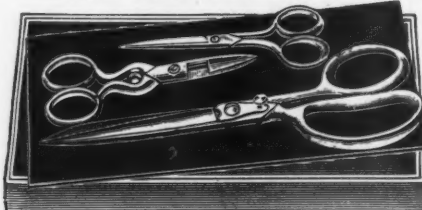


A REPEATER and SURE SHOT

Magazine holds 500 air rifle shot; lever action; smooth and perfect; automatic shot retainer prevents shot from rolling out of barrel. Walnut stock, dull finish; gun metal finish round tapering barrel and frame.

Reward No. 107—500-Shot Air Rifle sent by parcel post for sending us five subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

SHEAR AND SCISSORS SET



A very beautiful and useful article for the woman. You must see this set to appreciate its value. Extra quality cast steel, full nickel plated, fitted bows. Set consists of 8-in. tension shears, 4½-in. buttonhole scissors, with inside set screw and 4½-in. sewing scissors.

Reward No. 108—Shear and Scissors Set sent by parcel post for sending us three subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

AUTOMOBILE TOOL KIT

Medium tan color roll, with cloth-bound edges and heavy black tape straps; complete with seven tools listed below:

- 1—Auto Adjustable Wrench, 9 in.
- 2—Wrench, ¾ and ½ in. openings.
- 3—Ball Pin Hammer
- 4—Cold Chisel.
- 5—Plier.
- 6—Screw Driver.
- 7—Cutter Pin Lifter, length open 13 inches, when rolled up 12 in. long and 10 in. in circumference.



Reward No. 109—Automobile Tool Kit sent by parcel post for sending us six subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

BOY SCOUTS' KNIFE

The only knife for a boy, is 3¼ in. long, has stag handle, four blades, 1 large saber pattern blade, 1 can opener, 1 combination screw driver and bottle opener, and 1 patent leather punch blade; half polished, German silver bolsters and shield; brass lining, German silver shackle.



Reward No. 110—Boy Scout Knife sent by parcel post for sending us four subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

SEWING AWLS



A handy tool to have around. Sew with a lock-stitch; practical for mending harness, shoes, tents, awnings.

Reward No. 111—Sewing Awl sent by parcel post for sending us two subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

PRUNING SAW

Polished flat steel frame, spring tempered, ¾ x 1½ inch.

Highest grade crucible steel blade, ½ in. wide, blued finish, beechwood handle with varnished edges. Fastened to frame with 3 brass screws; swivel for adjusting blade to cut at three different angles; ¼ in. under back at heel, ¾ in. under back at point, which permits saw to be used in narrow places. Length of blade 18½ in.; handle has larger opening than regular, enabling user to use comfortably when wearing a glove.

Reward No. 112—Pruning Saw sent by parcel post for sending us six subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

TEN TOOLS IN ONE



Tempered and polished tool steel blades; cutting tools sharpened; polished hollow maple handle, with screw cap, to contain blades; polished steel screw chuck, jaws and ferrule; length of blade 2½ in., length of handle 5½ in., length over all with blade attached 7½ in., diameter at chuck ½ in.

Reward No. 113—Ten Tools in One sent by parcel post for sending us two subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

FLASH LIGHT

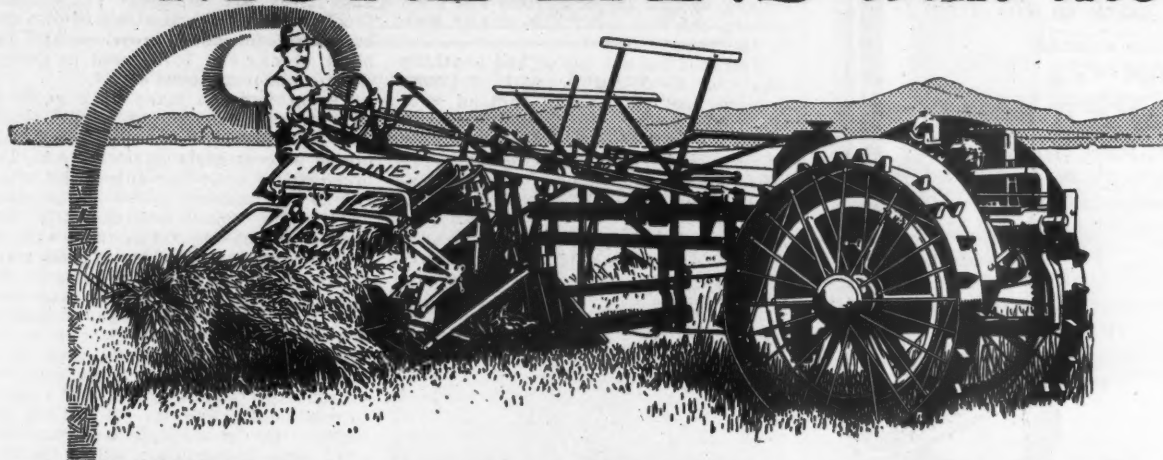
Wrought steel case, wrought brass end caps, nickel plated and polished; brass spring lever contact, continuous contact made by revolving spring lever until it engages itself with raised contact point; complete, with Mazda bulb No. 1180 and one "Three Crescent" battery No. 850.



Reward No. 114—Flash Light sent by parcel post for sending three subscriptions to Green's American Fruit Grower at regular rates { one year . . 50c three years \$1.00

SEND ALL ORDERS TO GREEN'S AMERICAN FRUIT GROWER :: 329 PLYMOUTH COURT CHICAGO, ILLINOIS

ONE MAN CAN FARM MORE LAND *with the*



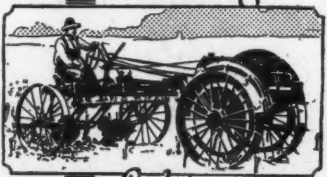
Plowing



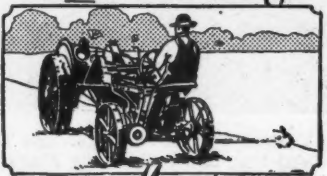
Harrowing



Seeding



Cultivating



Mowing

MOLINE UNIVERSAL TRACTOR

"It Solves the Farm Help Problem"

TWO MILLION MEN will be gone from the farms because of the war—strong, skilled, willing workers, only a small part of whom can be replaced by older men, boys and women. Yet production of food must be increased. There is only one way—equip the men left on the farms so they can do more work than ever before.

With the Moline-Universal—the original two-wheel tractor—*One Man* can farm more land than was ever before possible, because—

One Man has power at his command equal to five horses, capable of doing the work of seven horses owing to its greater speed and endurance. This power is always available for any farm work.

One Man operates the Moline-Universal Tractor from the seat of the implement to which it is attached, where he must sit in order to do good work.

One Man can start in the spring and go from one operation to another—plowing, harrowing, planting, cultivating, mowing, harvesting grain or corn, spreading manure, filling the silo, cutting wood, etc., doing all farm work from one year's end to another, independently of horses or hired help.

All these one-man operations with the Moline-Universal are possible because it is mounted on two wheels, all its weight is traction weight; it is powerful—pulls two 14-inch bottoms easily—yet it is light so

that it does not pack the soil. The Moline-Universal attaches direct to the implement, making one compact unit.

One woman or boy operates the Moline-Universal as easily as a man. Miss Ruth Harding of Albion, N. Y., a proud owner of a Moline-Universal, writes: "I have never called a man from his work to assist me with the tractor in any way."

Thousands of Moline-Universal Tractors are now at work under every conceivable condition in all parts of the United States and in Canada, England, France, Sweden, Norway, Denmark, Russia, Italy, Spain, Mexico, Peru, Argentina, Brazil, Cuba, Guatemala, South Africa, Australia. Wherever a Moline-Universal Tractor is sold there is immediately a big demand for more.

The demand for Moline-Universal Tractors has far exceeded our expectations. We built an enormous factory which is devoted entirely to making Moline-Universal Tractors and three times have erected large additions to cope with the enormous demand. We now have the largest tractor factory in the world.

Moline sales and service branches cover the country. No purchaser is ever more than a few hours away from Moline service.

The Moline-Universal will solve your help and power problems. It is ready for you now. Write us today for free booklet giving full description of the Moline-Universal and name of nearest Moline dealer.

Address Department 82

MOLINE PLOW COMPANY, Moline, Illinois

TO BIRD LOVERS

Most people who love orchards love the bright and pretty birds which frequent them. Indeed country life without these little fascinating creatures would be robbed of much of its charm. "Yes, but how about our cherries?" No wonder we sometimes think we would rather have more fruit and fewer birds.

In this quandary we welcome the suggestion that a mulberry tree will not only attract the birds but will feed them so much to their taste that they will neglect the fruit which we prize more highly. Let us see what the advantages of this tree are. It begins to bear at three or four years of age, and comes into fruit with the strawberries, lasting through the entire season until September. Its berries are beloved of birds

and chickens. Though too sweet to satisfy any but childish tastes they combine admirably with the tart fruits in preserves and pies. It is ornamental—not perhaps so much so as a noble oak or towering elm, but comely and useful. In planting a mulberry tree we need not devote our hopes to the pleasure it will give to our grandchildren. Because of its rapid growth we may look forward to enjoying it ourselves.

LIGHTNING RODS AGAIN

As so often happens, what began as a sort of fad and was discontinued as such, has come again to the fore with the sanction of science behind it. Protection of buildings against lightning by the proper installment of lightning rods

is now recognized by insurance companies as so desirable that some of them refuse to insure buildings not protected in this way.

Farmers' bulletin 842, Washington, D. C., will prove very useful to the farmer who wishes to provide against the risk of lightning. Outside of the loss that may be avoided there is a very real gain to persons who are unhappy during a thunder storm, in the feeling that they are far more secure in a house thus protected.

If fire should break out in the average country home, there would be no protection whatever. In this situation, it seems rather strange that more farmers do not keep chemical fire extinguishers on hand.

HERE'S A HOME ORCHARD

From one-half acre to an acre is ample space for the home orchard. This small area composed of the proper varieties and well cared for will give more satisfaction than three to five acres of straggling trees which go to neglect. The following list of fruits is recommended for Missouri orchards by Dr. J. C. Whitten of the University of Missouri College of Agriculture. The number before each variety named shows the number of trees of that variety for a complete home orchard:

Apples—1 Yellow Transparent; 1 Duchess; 1 Benoni; 1 Maiden's Blush; 1 Wealthy; 6 Jonathan; 3 Grimes Golden; 6 Delicious; 3 York; 6 Winesap; 3 Ingram.

Peaches—1 Red Bird; 1 Wheeler; 1 Mountain Rose; 2 Carmen; 1 Family Favorite; 5 Elberta; 2 Heath Cling; 2 Krummel.

Cherries—6 Early Richmond; 6 Mont Morency.

Plums—1 Red June; 1 Chabot; 1 Burbank; 1 Gold; 2 Wild Goose; 2 Wayland; 2 Damson.

Pears—1 Garber; 2 Kieffer; 2 Seckel; 2 Anjou.

The apple trees should be planted about thirty feet apart each way. The stone fruits and pears twenty feet apart.

For One Acre

The list of the number given will occupy about 1 acre of ground. The varieties are named in the order of their ripening. Half the above list will be more than adequate for a large family if the trees are well cared for. If desired alternate varieties of the early sorts may be omitted and where three to six of the more prominent later sorts are recommended the number may be reduced one-half.

Where personal tastes make it desirable, other varieties of similar season may be substituted in place of those named. For instance for home use many desire the Geniton apple or Ralls. This is a late winter keeper and may be substituted for late sorts like York or Ingram. If there are varieties growing in any neighborhood just suited to soil and taste it is desirable to retain them for local purposes. The above list is only a good general suggestion adapted to the state as a whole.

Local Adaptations

The following local adaptations should be borne in mind by the planter in planting winter apples: York and Maiden's Blush are poor land apples. They will often do well on thin soils or hot, burned out south slopes where other varieties would not be profitable. On some of the thin white oak clay ridges of North Missouri, these will fruit well where most other varieties fail. Jonathan, Grimes, Winesap and Ingram require rich soils to reach their best development. It is not advisable to plant them on thin land. The Duchess is a cosmopolitan apple. It adapts to almost any type of Missouri soil where apples will grow. Jonathan and Grimes need a fairly rich, deep soil and a high elevation where they will have good atmospheric drainage. They blossom very early and are likely to be caught by late frosts, if planted in low frosty places. On the other hand, Ingram, Winesap and Rome Beauty blossom late and are likely to escape spring frost and may be planted more largely for the locations subject to frost.

If one desires a very late keeping apple the Lansingburg is perhaps the latest keeper known. It is too hard to eat during the fall or winter. During the spring or summer it becomes mellow and of very good quality. It will keep in ordinary storage throughout the entire winter and usually until the following summer.

CHERRY CONTAINER

In Canada a small closed carton full of cherries is sold for ten cents on the trains. Cherry time is apt to be warm and there is nothing more refreshing to the thirsty traveler than nice juicy cherries. If some of our cherry-raising readers will take the tip we think that they may find a very profitable outlet for their fruit in this way.

How will it Work in the Field?

The first cost of a spray-rig is not the only feature to consider. Nor do good looks make it a good sprayer. What you want to know is—*How will it work in the field?*

Will it do everything you expected and paid your money for?

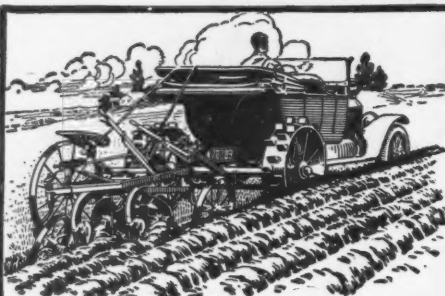
The FIELD-OSPRA YMO

Sprayers are built primarily to give years of service. They have dependable PUMPS and engines, strong frames, sturdy tanks, efficient agitators. They are good sprayers first. Their "snug" appearance is more or less incidental—Insist on the OSPRAYMO TRADEMARK.

OUR 1918 FREE CATALOG

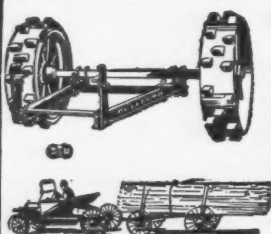
shows the complete line in detail. Write for it today. For ten cents we will include the handsome Spraying Guide "Why and How of Orchard Success."

FIELD FORCE PUMP CO.
Dept. B
ELMIRA,
N. Y.



Plow and Pull
With **FORD** All That 4
Your **FORD** Horses Can
Pullford \$155 F. O. B.
Quincy, Ill.

MAKES a practical tractor out of a Ford or most any other car. Easily attached to or removed from the car in thirty minutes. No holes to drill, no springs to remove. **Practical, Durable, Reliable.**



New FAN DEVICE Prevents Heating

Hundreds WORKING NOW for Satisfied and Enthusiastic Owners

Pulls plows, harrows, drills, mowers, binders, hay loaders, road graders, wagons, trucks, etc. Steel wheels with roller bearings and tires 10 inches wide, two pairs of hardened Vanadium steel pinions, one for plowing and one for hauling speed. A tractor with the reliability and durability of the Ford car. Prompt shipment. Write for catalog.

It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device, that made a most successful demonstration at Fremont, Nebraska.

PULLFORD COMPANY, Box 24C
Walton Heights, QUINCY, ILLINOIS
Telephone No. 84

Don't Think Only of Scale when you think of "SCALECIDE"

it is all there is to Dormant Spraying

Does *all* that any other spray will do—but no other spray will do *all* that "SCALECIDE" will do. Kills all kinds of scale—all forms of fungus and insects that can be reached in dormant season—and invigorates your trees—and costs no more. **Read our money-back proposition before ordering anything else.**

Send for free booklet, "Profits in Fall Spraying"

B. G. Pratt Co., Mfg Chemists
50 Church St. Dept. 40 New York

SAVE MONEY ON SHOES



National Aluminum Shoes outwear several pairs of all-leather, rubber or wood sole boots or shoes, for work on farm, creamery, railroad, in mine or factory. **GUARANTEED**—break-proof bottoms. Water-proof—rust-proof. Soleless, fit fine, easy walking. Keep feet dry, warm, comfortable. Removable cushion felt insoles. Best leather uppers. Removable friction tape takes up wear, prevents slipping—easy to replace at small cost. Thousands of satisfied users. Money back if not satisfied after seeing and trying on. Write for free catalog giving prices, styles and how to order.

National Aluminum Shoe Co.
Box 44
Racine, Wis.

NATIONAL ALUMINUM SHOES

IRON AGE

Farm, Garden and Orchard Tools

Answer the farmer's big questions: How can I grow crops with least expense? How can I produce fancy fruit with the least time, labor and cost? The

IRON AGE Barrel Sprayer

solves the spraying problem for the small orchard, farm, public park, poultry yard and houses, etc. Easily pushed wherever wanted and operated by man or boy. The only pump built of its type, easily taken apart and made with renewable valves. We make a full line of orchard and field sprayers. Write today for booklet—free.

Bateman Mfg Co., Box 16F, Grenloch, N.J.

FIX YOUR OWN SALARY

Make good money selling Farm and Grass Seeds to neighbors and friends. Commissions run big. The more you sell, the more you make. We furnish you free catalogues and interesting literature. You make a good profit on every order. Our finest quality seeds, lowest prices and prompt service get the business. This is a big opportunity for you. Write today.

E. E. ELDER, Sales Agent
1829 W. 43rd Street Dept. F Chicago, Illinois

How to Mark Varieties

S. C. Dunkelberger, Pennsylvania

The necessity of reducing production costs in fruit growing is being given much thought and is responsible for the adoption of many labor and time saving devices. The old adage, "Necessity is the Mother of Invention," applies equally well to the orchardist and fruit grower, more so now than at any time in the past.

Who that has set out or had anything whatever to do in or with a young orchard, has not had to contend with the rough-drawn, dirty and crumbled

By keying all varieties numerically and stamping the number of the particular variety to which the tree belongs on the plate, the grower can tell at a glance to which variety the tree belongs. As an example, the checks on all Stayman trees are stamped "1," Grimes Golden "2," etc. A good set of dies can be bought for about a dollar, and the blank checks can be secured in quantities for about one cent each.

The grower can make up a guide to suit his own convenience, including all the varieties in his orchard and any others he contemplates setting out. The orchardist readily recognizes the necessity of a permanent marker. The plates are lasting, small, not unsightly, and are not in the way. The trees will not grow over the checks for a good many years, unless the wire is drawn too tight. Finally when they do grow over they can be easily replaced, if desired, by securing them through one of the main limbs, which will by then be of considerable thickness. The checks will prevent any doubt or guesswork relative to determining any variety and the saving in time in counting trees and tree rows alone is worth more than the cost.

Some experiment stations and commercial growers are using a thin board or shingle hung on each tree by means of a large wire loop, with the name of the variety painted or otherwise marked on the shingle, but they have never been entirely satisfactory. Not only is the short period of their usefulness, on ac-



A Permanent Variety Marker Ready to Be Secured in the Stem of a Young Tree

sketch, ostentatiously called a map of the orchard, and almost forgot all ethics of religion on a windy day in vain endeavor to save the pestiferous thing from entire ruin? As a record for his office, the self-made map is a necessity that the orchardist will probably never get away from. For field work, however, it has long been looked upon with disfavor and its continued use has not been a matter of choice.

How to Use Markers

A splendid little system to show the variety of each tree at a glance for a goodly number of years has just come to light in the form of the German silver key check—such as we used to send a quarter for, with our name and address on, to put on our key rings when we were boys. One of these checks is attached to each tree as shown in the accompanying illustration at the time of planting.

Bore a small hole, preferably one-eighth of an inch in diameter, through the stem or trunk of the young tree at any desired height from the ground. Pull a six-inch strand of No. 14 wire through the hole at one end of the check, double the wire in the middle and thread both ends through the hole in the stem of the tree; then bend the wire over about one-half inch from each end in opposite directions in the same way that a cotter pin is secured.



The Variety Marker in Place. The Tree Will Not Grow Over the Marker for a Number of Years

count of becoming weatherbeaten, a decided disadvantage, but they are very apt to split by continual flapping against the tree in the wind, and the parts may be blown away and lost, leaving the tree without any means of identification. A shingle hung up on each tree in an orchard is not very agreeable to the eye and some growers object to their use on that account alone.

HOW TO PROTECT GRAPES

For a long time clusters of grapes have been bagged in order to bring the fruit to perfection safe from the attacks of insects, etc. This practice seems to have no bad effect upon the color, flavor or quality of the fruit, but when it is suggested that it might be well to spread cheese cloth over the entire plant some obvious objections arise.

In the first place the shading effect upon the leaf would interfere with the

maturing and coloring of the fruit. Mildew would suffer no abatement and root troubles would not be reached by this method. Proper treatment of the vines, good cultivation and spraying in season, would do more to protect against insects of the air than a cloth covering. The expense of covering any large number of vines entirely with even so cheap a material as cheesecloth, makes another very well-grounded objection to such an idea.

Poultry for Profit



C. A. Langston, Editor of "Poultry for Profit" Department

Eggs are very scarce and poultry keepers as well as consumers are complaining. And many are asking what is the matter. The usual explanation, which is that hens are not quite ready for laying and the late hatched pullets are not quite mature enough, does not fully explain the present situation. To state the matter differently, the complaint is that what fowls are laying are not laying as freely as in previous years, and pullets now old enough to be producing have not fulfilled expectations. Perhaps there is some ground for complaint. What is it? One guess is as good as another but here is mine.

The tardiness of yearling hens in commencing to lay this winter and the backwardness of early hatched pullets which are quite old enough to lay are probably due to short feeding. Certain ingredients are not supplied and the hens can not lay without a ration containing all the elements entering into the composition of an egg.

Pullet Eggs

Late fall and early winter eggs must be produced by pullets. If the pullets hatched by April 20 are not laying now, the poultry keeper should look carefully for the trouble.

This season is generally notable in poultry experience by the fact that even March hatched pullets have been shy about laying. At any rate, poultry keepers have noted and commented upon this fact. One possible conclusion is that the stock is "run out." This conclusion suggests a change of strain or even of breed, and some are considering these very things.

Look Before You Leap

Every poultry reader who finds himself in this uncertain state of mind with respect to his strain or his breed should ponder well a few facts before acting.

1. The high price of feed may have caused a cutting down of the ration from chick to mature pullet. This holding back of even the smallest portion of the proper daily ration may have been entirely unconscious but its effect has been accumulative. Day by day, when the chicks should have been coming along at the normal rate they have been loitering, and the total effect of six months daily loitering is now evident in the undersized and unproductive pullets in the farm flock. The flock is not laying as it should because it is not up to laying vigor.

2. Hatching eggs are going to be scarce and high next spring. Mature stock for breeding will also be scarce. Everybody has cut down to the very lowest point and many have dropped out of the business altogether. If you are certain that one of these plans is your way out, that is another matter. This is for those who may be tempted to act hastily or unadvisedly.

International Egg Laying Contest

The report of the last month (October) of the Sixth International Egg Laying Contest, conducted at Storrs Agricultural Experiment Station, Connecticut, gives a very brief summary of the year's work.

A pen of barred rocks came out ahead this year. The ten pullets of the winning pen laid 2,110 an average of 211 eggs per fowl. A pen of white leghorns came second with 2,090 eggs.

The Surplus Roosters

Every surplus rooster sent to market represents a gift of a half a dollar or more to the dealer. Some markets are now offering sixty cents for large males, less than half of their true value.

An inquiry came to a breeder for a cheap rooster. One weighing eight pounds was offered at \$2.00. The prospective buyer thought of the sixty-cent roosters and questioned the fairness of the price. The breeder explained that the price was exactly the meat value of the carcass and the inquirer closed the bargain.

Do not sell roosters for less than their meat value. Eat them.

Messy Feeds

The winter season is the period of messy feeds. All sorts of concoctions are invented, some very good and some worthless, but all troublesome and messy. The warm water advocates must supply warm water or introduce patented devices for heating the water in the fount. One of the most successful poultrymen in the country compels his winter layers to go to a pond and drink out of holes cut in the ice.

Hot mashers are all right but they do not pay for the extra trouble. The egg laying contests have shown that the dry mash will answer every proper feeding purpose in the coldest weather.

Plenty of Litter

Farm poultry is not always provided with sufficient litter. Scratching around the barn and in the manure pile are the general rule. But where poultry is kept away from the barn premises, the hen-house should have a liberal supply of straw or shredded corn stalks. The grain should always be kicked into this litter so as to induce exercise.

Hoppers For Mashers

The dry mashers are most economically fed in hoppers. Any homemade device will do. The arrangement should allow the mash to automatically drop down as needed. Any man handy with tools can convert an ordinary box into a satisfactory hopper at an expense of a few nails and a little time.

Plan Ahead

The breeding season will soon come around and it is not too early to prepare for it.

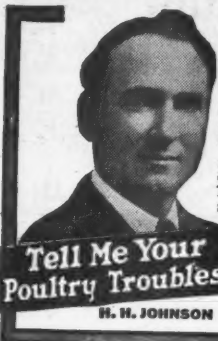
Look out for the best layers of good type and color and mark them for special breeding pens. Turn detective and get the loafers. Take them out of the flock at once. They will be laying next spring and many of their eggs will be incubated and more loafers will be added to the flock.

Read some good book on poultry keeping. You will surely gain some useful information. The hit or miss method is out of date. Poultry keepers as well as others owe a service to their country. They should earnestly strive

How to Get Winter Eggs

Any poultry raiser can keep his hens laying right through the winter. Hens need not "go on a strike" but egg production can be doubled. A few cents' worth of Rockledge Poultry Tonic given your hens should double their egg production this year and certainly show you a big profit. This tonic, easily given in tablet form, revitalizes the whole flock and makes hens work all the time. If you want to make more money from your poultry, by all means write to Firman L. Carswell, 212 Gateway Station, Kansas City, Mo., today and have him send you a season's supply of this wonderful tonic for \$1.00 (prepaid). Two big Kansas City banks guarantee satisfactory results, or every cent of your money will be returned. Send a dollar today to the above address, or write for the Free Rockledge Poultry Book (free), which gives valuable facts about Mr. Carswell's scientific methods of poultry raising.—Adv.

"I Always Do Better With Old Trusty"



Tell Me Your Poultry Troubles

H. H. JOHNSON

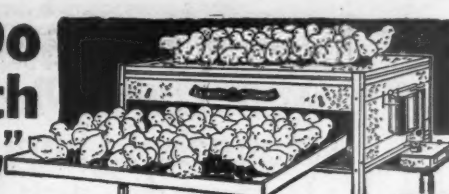
So says Mrs. Catherine Sullivan of Osman, Wis., one of the 750,000 Old Trusty owners. "I've seen many good incubators but the higher the poultry prices the more we depend upon Old Trusty." Write and

GET THIS BOOK OF FREE Poultry "Know How"

and learn why Old Trusty means more than ever to you this year. With valuable eggs and big profits at stake you can't afford to lose a single hatch. Our oldest machines are now 14 years old and still making big hatches.

We pay the freight or express and ship Old Trusty double quick—completely built—ready for business the minute it arrives. Write today. Yours truly, H. H. JOHNSON.

M. M. JOHNSON COMPANY
CLAY CENTER NEBRASKA



With or Without Metal Cover



to make all their undertakings successful. The country needs accurate thinking and careful planning. Every thing should be made to count. What is not done with the head must be done with the heels. The choice is between the head method and the heel method. A blending of the two would probably give the best results.

THE AMERICAN FRUIT GROWER will gladly furnish a list of good books on poultry. Send for it.

Important Message

To every poultry keeper from Herbert Hoover, head of the Food Administration: "We are short of red meat. Our soldiers and our allies require more than ever before. We are advocating in every household, every hotel, and every restaurant in this country the substitution of poultry for red meat. Increased production of poultry can be effected much faster than beef, pork, and mutton. While we want increase in all the latter, we must have a quick response in poultry and poultry products. There is a great waste of poultry feeds upon every household and every farm. It requires little labor. Can not the poultry raisers of the country help us by providing the increased supply we need?"

HERBERT HOOVER."

Wonderful Egg Producer

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs," and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs; so if you wish to try this great profit maker, write E. J. Reefer, poultry expert, 3451 Reefer Bldg., Kansas City, Mo., who will send you a season's supply of "More Eggs" Tonic for \$1.00 (prepaid). So confident is Mr. Reefer of the results that a million-dollar bank guarantees if you are not absolutely satisfied your dollar will be returned on request and the "More Eggs" costs you nothing. Send a dollar today, or ask Mr. Reefer for his Free Poultry Book that tells the experience of a man who has made a fortune out of poultry.—Adv.



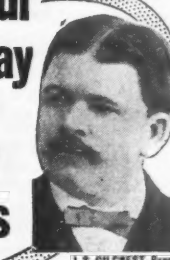
150 EGG INCUBATOR CHICK BROODER
Both are made of Calif. Redwood. Incubator is covered with asbestos and galvanized iron; has triple walls, copper tank, nurse, and thermometer, ready to use. 30 DAYS TRIAL—money back if not O.K. Write for FREE Catalog Now. Ironclad Incubator Co., Box 25, Racine, Wis.

POULTRY AND PIGEONS FOR PROFIT—Foy's big book tells all about it. Contains many colored plates—an encyclopedia of poultry information, poultry houses, feeding for eggs, etc. Written by a man who knows. Sent for 5 cents. Low prices, fowls and eggs. **FRANK FOY, Box 6, CLINTON, IOWA**



200 EGG HATCHER COSTS ONLY \$3
No freight to pay. Actual hen controls everything. No lamps, no expense, no costly mistakes. Over 350,000 in use. Thousands of testimonials. Agents wanted. Free Catalog with a Million-Mark Introductory Offer. NATIONAL HEN INC., Co., 514 N. 1st St., Los Angeles, Cal.

"Successful" Owners Stay in the Poultry Business



J. S. GILCREST, Pres., Poultry Association

THEIR SUCCESSES KEEP THEM THERE

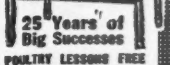
You want this time-tried, dependable hatchery to make the most of your opportunity this year. Write for my 1918 offer on

"SUCCESSFUL" INCUBATORS & BROODERS

Backed by 25 years' experience. Cabinet made and scientifically ventilated. Hot water heating plant. Write for Catalog—ask about poultry and eggs, too—and "Successful" Grain Sprouters.

Famous little booklet, "Proper Care and Feeding of Chicks, Ducks and Turkeys," 10 cents. Big catalog is FREE.

J. S. GILCREST, Pres. and Gen. Mgr. DES MOINES INCUBATOR CO., 16 Second Street, Des Moines, Iowa



"Raise More Poultry"

Is Our Country's Call. Now is the time to start—the demand is big—everyman, woman, boy and girl can help. Besides supplying the Nation with food, you can make big profits with little effort—and this small investment, **\$8.95** Champion 140-Egg Belle City Incubator

Hot Water—Copper Tank—Double Walls of Fibre Board—Self Regulated. With \$5.25 Hot Water 140-Chick Brooder—both only \$12.95. Full Paid E. of Rockies. Satisfaction Guaranteed. Share in my \$1000 in Prizes. Conditions easy. Order now or write today for my Free Book, "Hatching Facts". It tells all Jim Reeder, Fred.

Belle City Incubator Co., Box 103 Racine, Wis.

RAISE GUINEA PIGS for us. We buy all you raise. Easy to raise—very profitable—big demand. Pay better than poultry or eggs. Particulars, contract, booklet how to raise FREE. Write today. CAVES DISTRIBUTING CO., 3132 Grand Ave., Kansas City, Mo.

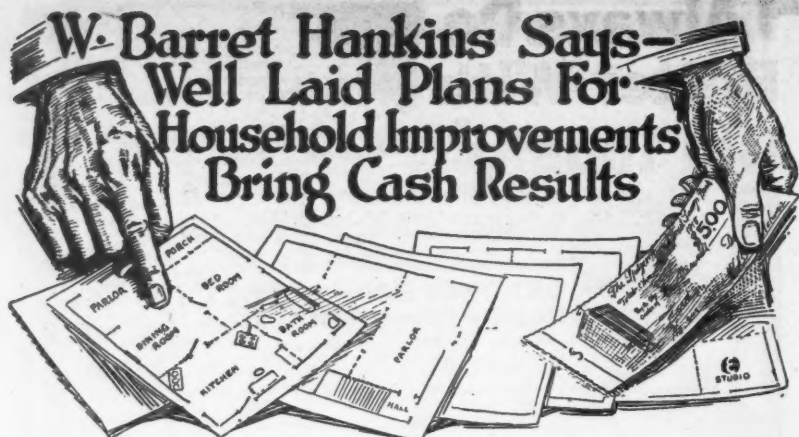
Poultry Book Latest and best yet! \$1.44 pages, 216 beautiful pictures; hatching, rearing, feeding and disease information. Describes how Poultry Farm handling 50 pure-bred varieties. Tells how to choose four eggs, incubators, sprouters. This book worth dollars mailed for 10 cents. Berry's Poultry Farm, Box 98, Clarinda, Iowa

FREE!—GENUINE EASTMAN PRIMO FILM PACK CAMERA, Size 2 1/2x3 1/4, for selling 55 Art and Religious pictures, or 55 plays, post cards at 10c each. Order your choice. Sent prepaid. GEO. GATES CO., Dept. 9572, CHICAGO

LEPAGE'S GLUE HANDY TUBES WILL MEND IT

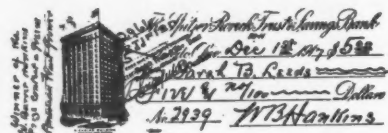
FARMING is PLEASANT

In the "Sunny South" for Nature has blessed this favored section with mild, healthful climate, productive soil and all that makes life worth living. You can buy good farm land in Virginia, West Virginia and North Carolina at \$15 per acre and up. Fruit, truck, poultry and general farming will prove successful here. Write for information, illustrated literature, etc., today. F. H. LABAUME, Agr. & Ind. Agt. N. & W. Ry., 395 Ry. Bldg., Roanoke, Virginia



TITLE DRAWING

Sarah B. Leeds, West Chester, Pennsylvania, is the lucky lady. To her has been awarded my personal prize for having accorded to plan submitted, the most efficiently equipped and arranged kitchen. Below is photographic reproduction of certified check mailed her.

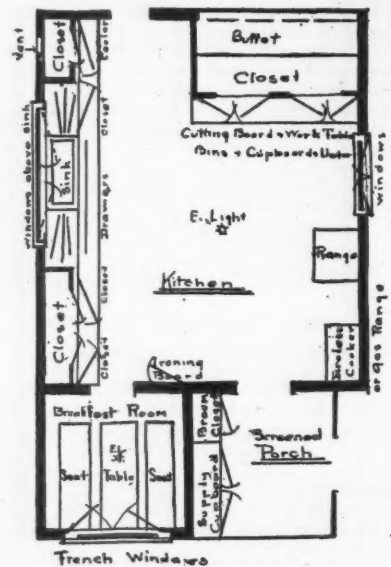


I extend my sincere thanks, together with that of the publishers of the AMERICAN FRUIT GROWER, to the more than a hundred ladies who submitted plans in competition for the prize.

One thing which more than all others shows the deep interest taken in this department of the AMERICAN FRUIT GROWER, is the excellent manner in which the plans were drawn by practically all who submitted them. Not only were the drawings executed with care, but they were accompanied by splendid letters of explanation. All showing that the women readers of the AMERICAN FRUIT GROWER are thinkers—progressive. This makes me very happy in my work for you. I am anxious to give you the best that I possess. In this respect, I feel that you will be interested in knowing—this being the beginning of the New Year—that the plans for the foundation of the W. Barret Hankins Institute of Household Efficiency, have been completed. By which is meant a broader scope of usefulness and a greater ability to serve. The number of my associates has been added to, to include a specialist in each of these lines—the chemistry of metals, fabrics and food; drugs and hygiene; costs and prices; design and construction; architecture, building materials and interior decorations; the science of cooking, recipes, etc. So many readers of this publication have written me to know the name and the manufacturer of articles bearing my test and approval, that I know the expense and effort being put forth on behalf of this department in the AMERICAN FRUIT GROWER is being appreciated.

In the December number of the AMERICAN FRUIT GROWER I gave the name and address (rural routes, box and street numbers purposely omitted) of those making entries in the prize contest which were deserving special praise. To this list I add the following which were among those received after the December number had gone to press: Mrs. John H. Friedel, Pearl River, N. Y.; Mrs. C. R. Rogers, Minneapolis, Minn.; Mrs. Harvey Wouder, Carey, Ohio; Mrs. C. H. Wilson, Cochise, Ariz.; Mrs. Manton E. Treadgold, Bandon, Ore.; Mrs. Elise M. Powell, Brookfield, Mass.; Ethel Flickenger, Richmond, Ohio; Mrs. Franklin C. Williams, Minnekahatta, So. Dakota; Mrs. A. L. Slaton, Grafton, Ill.; Mrs. M. J. Yoder, Carnegie, Pa.; Minne Scholl, Masolona, Mich.; Benj. A. Miller, Drums, Pa.; Mrs. J. H. Dunne, San Antonio, Fla.; Mrs. R. P. Wyatt,

Grover Hill, Ohio; Mrs. Mack Bell, Asheville, N. C.; Mrs. Iva V. Ely, Windsor, Vt.; Mrs. Verna M. Moore, Staunton, Va.; Mrs. C. H. Turner, Fowler, Kans.; Mrs. J. Leroy England, North East, Md.



(Design submitted by Mrs. Manton E. Treadgold, Bandon, Oregon, showing the great care in making drawings, which was typical of the designs submitted.)

I wish I could have sent a "Prize Check" to every contestant, to bring home forcibly, this fact—that well laid plans for household improvements bring cash results.

But all you ladies will be winners—winners in the big contest of life, because you are thinking and planning to put yourself in a position to grasp the bigger opportunities.

Every woman who is seeking a way out of drudgery in order that she may have time for those things that count for more toward her advancement, the rearing of her family and the betterment of her home, will reap results unmeasurable in mere dollars and cents.

We are entering upon a New Year. Let each of us strive for a greater efficiency in household management.

The present age is marking an era in history of changing conditions in home life, from which we will emerge in a short time hence, further advanced than could have been accomplished in half a century under normal conditions.

Women are drawing nearer to the home—not further from it. Every modern device that takes from her the drudgery of details, is an aid to this.

The up-to-date appliances that lighten work, save labor, save time for the home, are helping housewives make the word "Home" mean more today than it ever did.

"Home" holds, as in the hollow of the hand, the future—ninety-nine per cent of all that a people stand for in morals, education, charity, character, wealth, strength and health is moulded in the home. The greatest share of the credit is due the woman. Free her hands from drudgery—take away the slavery of unnecessary work that saps her youth, her beauty, her strength and her health—

On 4 Week's Trial

No Money Down—Freight Prepaid



Valuable Piano Book FREE—

"The Book of Complete Information About Pianos" Mail free coupon today. The New York World says, "A book of educational interest everyone should own." Tells the secrets of piano making and piano selling. Its 140 pages show you how to judge piano quality and prices. Sent free. Also art catalog of newest Wing styles and full particulars of our great free shipment offer. Do not delay. Send the free coupon now!

(Est. 1885) 9th Avenue and 15th Street, Dept. 4228, New York

Wing & Son



Your choice of 33 Styles of

The Wing Piano and Player Piano

YES, we will ship you, on 4 weeks' absolutely free trial, a highest grade Wing Piano or Player Piano direct from our own factory, all freight prepaid. You may return it at our expense. You alone are the judge. No money down—nothing on arrival—no deposit. You will be amazed at our direct-from-the-factory price on the famous

Wing, guaranteed for 40 years. Small monthly payments, or cash, as you prefer. But first 4 weeks free trial.

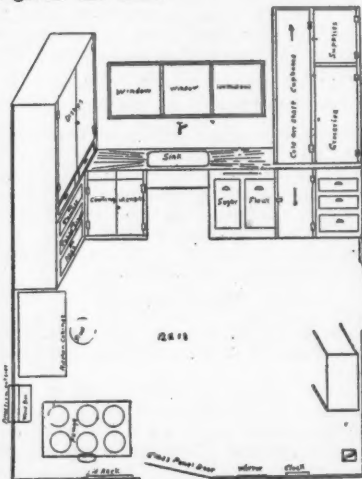
Wing & Son

9th Avenue and 15th Street, Dept. 4228, New York, N. Y.

Gentlemen—Without any obligation to purchase or pay for anything, please send me, free and prepaid, "The Book of Complete Information About Pianos." Also send full particulars of your rock-bottom offer on the Wing piano and catalog of latest art styles.

Name _____ Address _____

tear down the walls of labor that obstruct her vision of the greater future that she and only she can accomplish, if given the time.



(Plan submitted by Mrs. C. H. Wilson, Cochise, Ariz. An example of the excellence of the idea executed in working out the drawings of kitchen plans in the homes of contestants in the prize contest.)

From our factories to our shops and stores comes appliances designed with thought and care for the conservation of labor, time, energy, strength and money. So complete is the market today, that no one department of the household is overlooked. Investigate these things. Buy them ready-made. Do not attempt to "makeshift"—those that are made ready for you may cost a few dollars more, but in results and years of service, they are worth all the difference asked in price. Trust to goods of known merit. Rely on the advertised article. My tests and approvals that will appear more elaborately than heretofore, will help you. Watch for them.

I will gladly send to any reader of the AMERICAN FRUIT GROWER, who writes me, sending 3c stamp for reply, a chart for personal analysis, for foundation work in the study of efficiency. Address me, W. Barret Hankins, 422 Nasby Building, Toledo, Ohio.

I have said in recent talks to you, that shortly I would be prepared to care for

your requirements in the way of information, etc., as to the names of manufacturers of different types of household appliances. I am pleased to announce that beginning with the New Year, I am at your service. Make free use of it. When writing, state the class of article you are interested in, and enclose a 3c stamp for reply. I wish all a happy and prosperous New Year.

Hill's Evergreens Grow

All hardy stock—twice transplanted—root pruned. Protect buildings, stock, crops. Hill's Evergreen Book, illustrated in colors, Free. Write today. B. Hill Nursery Co., Box 2372, Danville, Ill. Evergreen Specialists

Plant this Giant Golden Sweet

Corn and save on your sugar. It's as delicious as the celebrated Golden Bantam and much larger, yet only 3 days later. It does not become mealy, but remains sweet and succulent until too hard for the table. The stalks grow 6 ft. high and bear two to three ears each. We offer a large package of this seed, grown on our own farm, at 1c, postpaid. Our supply is limited, better order today. Also ask for our 1918 Catalog—free.

J. J. H. GREGORY & SON, 155 Elm St., Marblehead, Mass.

IRON AGE

GARDEN TOOLS

Answer the farmer's big questions: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder

solves the garden labor problem. Takes the place of many tools—sifted in small space. Sows, covers, cultivates, weeds, ridges, etc., better than old-time tools.

A woman, boy or girl can push it and do a day's hand-work in 30 minutes. 30 combinations, \$4.50 to \$30.00. Write for booklet.

Bateman Mfg. Co., Box 16C, Greenloch, N.J.

Li

The feed and limiting dairying operation when mandating stock interest in corn harvest has come the expected ing at more t although cert diate feeding prices. These be exhausted will have to b of prices.

The Food A

"The main ministration a that the prod on a fair pri will be profit farmer incre bred; to limi and the mid speculation." as we can affa a minimum of weight for th droves on th further notice

Fruit grow out in this bu into the fruit

Ra It is not st the subject of nation. Econ set the roden structive agen need of saving natural that th thief and des with renewed

According t States Depart and mice are the world.

In the Uni destroy each warehouses, in poultry and o of \$200,000,000 the gross earn

The grain c and mice on r the taxes.

Rats and m times a year, tive kind at

Make grana keep planks a and get a goo

Corn a

The preside stock yards a of the food a outlined his stock breeding

"Many Amer a big mistake. many brood i marketing too marked increa together with a bers has been i average weigh at market. A made in the c many beef cow too many you that are in no tion." The in ion is that fe ing of breeding continues muc meat crisis al

Shall There are e in this country tries where h donkeys are sl

Livestock and Dairy

R. G. Carter, Editor of "Live Stock and Dairying" Department

The feed question is the controlling and limiting factor in all live stock and dairying operations. During the summer when wheat by-products were demanding unheard of prices, the live stock interests were looking to the coming corn harvest for relief. That harvest has come but it has not brought the expected relief. Corn is now moving at more than half the price of wheat although certain soft grades for immediate feeding may be had at pre-war prices. These grades, however, will soon be exhausted, and then the industry will have to be keyed to the higher level of prices.

The Food Administration and the Hog

"The main purpose of the Food Administration as to hogs are four: To see that the producer at all times can count on a fair price for his hogs so that it will be profitable to him; to see that the farmer increases the number of hogs bred; to limit the profit of the packer and the middle-men; and to eliminate speculation." * * * "The prices so far as we can affect them will not go below a minimum of about \$15.50 per hundred-weight for the average of the packer's droves on the Chicago market until further notice."

Fruit growers can undoubtedly help out in this business, for hog raising fits into the fruit growing scheme.

Rats! Rats! Rats!

It is not strange that the rat is now the subject of renewed official condemnation. Economists have long since set the rodent in a high seat as a destructive agent, but with the imperative need of saving every grain of feed it is natural that the campaign against this thief and despoiler should be directed with renewed energy.

According to biologists of the United States Department of Agriculture, rats and mice are the worst animal pests in the world.

In the United States rats and mice destroy each year in homes, factories, warehouses, in cars and on ships, grains, poultry and other products to the value of \$200,000,000—an amount equivalent to the gross earnings of 200,000 men.

The grain eaten and wasted by rats and mice on many farms would pay all the taxes.

Rats and mice breed from six to ten times a year, producing their destructive kind at an alarming rate.

Make granaries rat and mice proof, keep planks and boards off the ground, and get a good rat dog.

Corn and Stock Feeding

The president of one of the great stock yards at Chicago, at the request of the food administration bureau has outlined his views on the future of stock breeding:

"Many American farmers are making a big mistake. They have marketed too many brood sows, and now they are marketing too many pigs. The recent marked increase in average weight, together with a marked decrease in numbers has been followed by a much lighter average weight and increasing receipts at market. A similar mistake is being made in the marketing of cattle. Too many beef cows are being sacrificed and too many young cattle and beef steers that are in no better than feeder condition." The interpretation of this opinion is that farmers are slowly disposing of breeding stock. If this sacrifice continues much longer, there will be a meat crisis all over the country.

Shall We Eat Horses

There are eight million people living in this country who were born in countries where horses, mules, asses and donkeys are slaughtered for human consumption.

And eight million more live here who speak the tongue of the nationality from which they sprang, with quite as much fluency as they speak English. Probably there are four million Americans who have no foolish prejudice about what they eat. This makes a grand total of twenty millions—one-fifth of our population—who might become habitual users of horse flesh. This would secure a tremendous enlargement of our food supply.

The head of an association of horsemen states that there are 4,000,000 horses in this country which might as well be eaten. Dressing out at 500 pounds per carcass here are 2,000,000,000 pounds of flesh available for immediate consumption.

Between 8,000,000 and 9,000,000 cattle can be slaughtered yearly out of farm holdings of 62,000,000. On the same ratio, with unlimited breeding, 3,000,000 horses could be raised and slaughtered every year.

The slaughtering of 3,000,000 horses yearly would add that many hides to the national store of leather now alarmingly depleted. Our present system of diet decrees the total loss of outworn and crippled horses. Can we afford this annual wastage?

Cattle Dips Pay

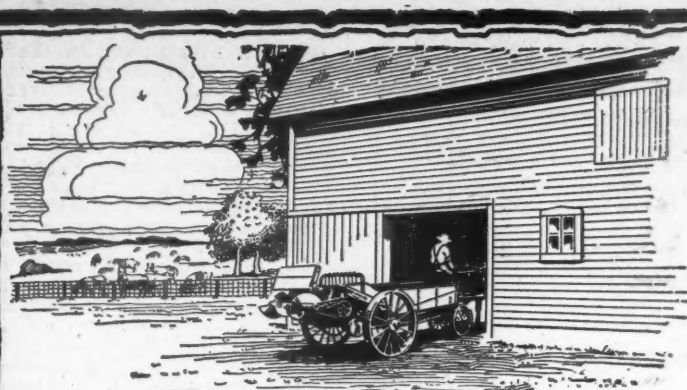
From the U. S. Department of Agriculture we quote the following, to show that the many sprays which we grudgingly bestow upon our apple trees have their counterpart in the stock business.

As we know, Florida cattle have suffered much from ticks, and experiments recently conducted there give these results:

"Cattle that are dipped are free from ticks and show improvement in growth and flesh. They have glossy coats and are in good condition. The cattle which are dipped regularly every 14 days will go into the winter strong and vigorous and the winter death rate heretofore suffered should be largely reduced. Ticks make fewer head of cattle and fewer pounds of beef, milk and butter. The more cattle and the more pounds, the more cash. When cattle are dipped, the tick goes out and the cash comes in."

DESTROYING GARDEN INSECTS DURING WINTER

To protect most of next year's garden and truck crops from severe insect damage, work should be started the previous fall or at least during the winter. As garden crops mature and are used during the fall every effort should be made to dispose of remnants, either for stock food or for forming compost for the garden next year. Remnants of cabbage, melons, squashes, lettuce, radishes and other crops should not be allowed to remain as food plants on which many insects will later mature, or under which they will harbor during the winter. If the garden and truck patch has not already been given a thorough house cleaning, now is the time to do it. It should also be plowed, or deeply spaded in order to have the soil in better shape for crops in the spring, and at the same time in order to break up the winter harboring places of many underground insect pests. Rubbish collected from the garden may be burned if desired, but can also be spaded under or piled up and partly covered with stable manure or dirt to hasten decomposition. However, it should not be left as winter shelter for insect pests. A little effort at this time, according to Leonard Haseman of the University of Missouri College of Agriculture, will help to make next spring's war on garden insects a complete success.



The Cure for a Billion Dollar Waste

THIS year—if you own no spreader, you are not only losing out on the bigger yields and profits that should be yours, but you are contributing to a billion-dollar manure waste, and stopping your ears to the world-call for food.

We have facts and figures to show that in scores of cases the use of an International Harvester spreader has added to crops more than enough to pay for the spreader in one year.

The dealer will show you the new No. 8 Low Corn King, Cloverleaf or 20th Century. This is the latest International Harvester spreader, the popular 2-horse, light-draft, narrow-box machine with the remarkable new spiral wide-spread. For the small-to-average farm this is bound to be the spreader success of the year. Look it over from tongue to spiral, see it at work, and you will agree with us.

In the Low Corn King, Cloverleaf and 20th Century lines are larger spreaders too, with disk or spiral wide-spread, all of narrow, easy-handling width; low, of remarkably light draft, strongly and simply constructed. Write us for catalogues and see the local dealer for a satisfactory money-making Low Corn King, Cloverleaf or 20th Century spreader.

International Harvester Company of America

CHICAGO (Incorporated) U S A
Champion Deering McCormick Milwaukee Osborn

Only \$2 DOWN and One Year To Pay

NEW BUTTERFLY

up to our big 800 pound capacity machine shown here—all sold at similar low prices and on our liberal terms of only \$2 down and a year to pay. Every machine guaranteed a lifetime against defects in material and workmanship.

30 DAYS' FREE TRIAL

You can have 30 days' FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your \$2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct-from-factory order. Buy direct and save money. Write today.

ALBAUGH-DOVER COMPANY, 2249 Marshall Blvd., Chicago, Ill.

Over 125,000 new Butterflies Cream Separators now in use.

\$17.95 ON TRIAL

American

FULLY GUARANTEED

CREAM SEPARATOR

A Solid Proposition to send new, well made, easy running, perfect skimming separator for \$17.95. Skims warm or cold milk; heavy or light cream. Different from picture, which shows larger capacity machines. See our plan of MONTHLY PAYMENTS.

Bowl is sanitary, marvelously cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan. Western orders filled from western points.

AMERICAN SEPARATOR CO.
Box 4121, Bainbridge, N. Y.

FREE POWERFUL AIR GUN
Big lever action rifle free for calling 25 Art and Religion Pictures or 25 plays. Post Card at 10c. Order your choice. GATES INFO. CO., Dept. 637 CHICAGO

DEATH TO HEAVES

NEWTON'S Heave, Cough, Distemper and Indigestion Cure.

Some cases cured by 1st or 2nd \$1 can. Three cans are guaranteed to cure heaves or money refunded.

The original and the up-to-date Standard Veterinary Remedy for Heaves; free booklet explains fully. 25 years sale and veterinary use.

CURES HEAVES BY CORRECTING CAUSE—INDIGESTION. IT'S A GRAND CONDITIONER AND WORM EXPELLER

Safe. Most economical. Excellent for Cattle and Hogs. \$1.00 per can at dealers, at same price by parcel post.

THE NEWTON REMEDY CO., Toledo, Ohio

Light Weight
Cushman Engines

Built light, built right—for farmers who want an engine to do many jobs in many places. Instead of one job in one place. Easy to move around. Very steady and quiet—no jumping, no loud or violent explosions, but smooth running. Throttle Governed. Schebler Carburetor. Friction clutch pulley. Runs at any speed.

4 H. P. Weighs Only 190 lbs.

Mounted on light truck, it may be pulled around by hand.

Just the engine for power sprayers because of light weight and very steady speed, giving uniform distribution and a thorough job. 8 h. p. 2-cylinder, for heavier work, weighs only 230 lbs. Hook on Light Weight Engines sent free.

CUSHMAN MOTOR WORKS
955 N. 21st St., Lincoln, Nebr.

For All Farm Work
4 to 20 H.P.

BROWN FENCE

FREE!

Get my big book and sample of Brown Fence. Compare our prices and quality with others. We save you Big Money. Prices 13c per rod up. DIRECT FROM FACTORY—FREIGHT PREPAID.

We use heavy DOUBLE GALVANIZED Wire. 150 styles—Hog, Sheep, Poultry, Horse, Cattle, Rabbit Fence—Gates, Lawn Fence, Steel Posts and Barb Wire. Write today for big money saving catalog and sample to test—free.

THE BROWN FENCE & WIRE CO.
DEPT. 225 CLEVELAND, OHIO

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

Reduces Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from Bruises or Strains; stops Spavin Lameness, allays pain. Does not blister, remove the hair or lay up the horse. \$2.00 a bottle at druggists or delivered. Book 1 M free.

ABSORBINE, JR. for mankind—an antiseptic liniment for bruises, cuts, wounds, strains, painful, swollen veins or glands. It heals and soothes. \$1.00 a bottle at druggists or postpaid. Will tell you more if you write. Made in the U. S. A. by W. F. YOUNG, P.D.F., 11 Temple St., Springfield, Mass.

SELF-OILING WINDMILL
With INCLOSED MOTOR
Keeping OUT DUST and RAIN—Keeping IN OIL
SPASH OILING SYSTEM

Constantly Flooding Every Bearing With Oil, Makes It Pump The Lightest Breeze And Prevents Wear

OIL SUPPLY REPLENISHED ONLY ONCE A YEAR

DOUBLE GEARS—Each Carrying Half the Load
Every feature desirable in a windmill in the
AUTO-OILED AERMOTOR
Gasoline Engines—Pumps—Tanks
Water Supply Goods—Steel Frame Saws
WRITE AERMOTOR CO. 2500 12TH ST. CHICAGO

FREE 10 DAY
FREE Orchard Test

STAHL SPRAYERS

We will ship you any Barrel Spraying Outfit in our catalog for a thorough Ten-Days' FREE Test.

Get Our New Catalog
—Special Free Trial Offer
Direct-from-factory-to-farm Selling plan saves you fully 40%. If not greatest bargain you ever saw, return it—test costs nothing. Write, Stahl Sprayer Co., Box 44 Quincy, Ill.

Beacon FREE
Lamp

Lights Your Home Like Day.
100 Candle Power incandescent pure white light from (kerosene) coal oil. Beats either gas or electricity.
COSTS ONLY 1 CENT FOR 6 HOURS
We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Lamp FREE. Write today. **AGENTS WANTED.**

HOME SUPPLY CO., 14 Home Bldg., Kansas City, Mo.

FARM FENCE

21¢ CENTS A ROD FOR 36-inch Hog Fence; 31¢ a rod for 47-in. 15 styles Farm, Poultry and Lawn Fences. Low prices Barbed Wire. **FACTORY TO USER DIRECT.**
Sold on 30 days FREE TRIAL. Write for free catalog now.
INTERLOCKING FENCE CO.
Box 150 MORTON, ILL.

Kindly Mention American Fruit Grower when writing to Advertisers

CUT WOOD FOR FUEL

Farmers with timber on their land have a big opportunity this year. An opportunity to save money by cutting their own wood as a substitute for coal, and selling a good portion of it to relieve a serious situation in the coal market and benefit the country at large.

Many farms have wood lots from which wood may be cut without injury to saw timber which may be growing. Scrub timber, properly called "weed" trees, can be cut and instead of taking away any value from the property actually better the condition of the timber which may later be cut for lumber. Cutting "wood" trees from a wood lot should have the same effect as cutting "weeds" from a garden.

These "weed" trees would never develop as lumber material and with the present market it is reasonably safe to say that they have a bigger market value right now than ever. Certainly, now is the time to turn them into cash.

Practically every stick of timber not suitable for lumber material now or later can be utilized. On many farms there are dead trees, fallen logs, stumps, old rail fences, etc., which make excellent fuel.

Many of the state boards of forestry have been giving this problem thorough study. Indiana, for example, has issued a bulletin showing the value or comparison of wood and coal as fuel and also pointing out how farmers can make big wages by cutting and hauling wood from their own land this winter. The following quotes the bulletin in part:

"An investigation of the wood fuel supply of Indiana has just been completed by the state board of forestry. The inquiry included the price of coal and wood in every county of Indiana and shows that the average cost of Indiana lump coal throughout the state on Nov. 3, 1917, was \$5.19 per ton, and of chestnut hard coal was \$9.63 per ton.

Quotations for Wood

"Good stove wood, 16 to 22 inches in length, for a rick 8 feet long by 4 feet high, was \$2.52 per rick, and of good block wood for heating stoves, same length and same size rick, was \$2.40. The average cost of cutting wood is from \$1 to \$1.25 per rick and the price of delivery 15 cents per rick.

"The result of the investigation shows that in many places hard coal cannot be obtained and no wood is offered for sale.

"Since a cord of good wood is equal in fuel value to a ton of coal, the foregoing prices show that wood fuel is cheaper than coal. The scarcity and high price of wood is a great incentive to the wood-lot owner to give his wood lot a forest cleaning, and of converting the wood in his wood lot into cash during the coming winter. The cutting of fallen timber and of dead or dying trees and the removal of trees that never will grow into good saw timber is called a forest cleaning. A forest cleaning gives the remaining trees a better chance to grow, and they will grow faster.

Wood Profits Variable

"The profit on a rick of wood would vary as to the cost of cutting, hauling and the price received. According to the investigation, the wood lot owner would realize from \$5 to \$12 per day for his labor and team. We are aware labor is scarce and high, but by the use of a one-man folding sawing machine you can saw your wood alone. Thus, it can be seen, cutting wood is not only profitable, but improves the wood lot. Of recent years, when coal was cheap, wood-lot owners have neglected this source of income. Now, since it pays to cut wood, let every wood-lot owner, as soon as the busy season is over, begin to cut wood, not only for home consumption, but for sale to the public.

In saving sheep for breeding purposes, select those with short legs and compact bodies. Long legs mean good jumpers.

Don't forget to finish off the pastured hogs with a ration of corn for a few weeks before slaughtering.

Why not use more brood mares for farm work and also get an extra income from the sale of colts?

130 ACRE ORCHARDS

Practically immune from frost, principally Winesaps, Jonathans, Y. N. Pippins and Rome Beauties, with Elberta and Salway Peach Fillers.

One and a half miles average distance from depot, packing house, school, church and stores. The land is platted park style and can be sold in tracts of one acre and upward.

S. J. Harrison, Benton City, Washington

THE ORIGINAL Indoor Closet

30,000 SOLD—FIFTH YEAR
More Comfortable,
Healthful, Convenient

Eliminates the out-house, open vault and cess-pool, which are breeding places for germs. Have a warm, dry, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

ABSOLUTELY ODORLESS

Put It Anywhere In The House
The germs are killed by a chemical process in water in the container. Empty once a month. No more trouble to empty than ashes. Closet absolutely guaranteed. Guarantee on file in the office of this publication. Ask for catalog and price.

ROWE SANITARY MFG. CO. 5401 6th ST., DETROIT, MICH.
Ask about the Ro-San Washstand—Hot and Cold Running Water Without Plumbing

FREE \$20.00 VIOLIN

Ukulele, Guitar, Mandolin, Hawaiian Guitar or Cornet

Yes, absolutely free to first pupils in each locality. We have the most wonderful, new, system for learning by mail to play by note. Piano, Organ, Violin, Mandolin, Guitar, Ukulele, Hawaiian Guitar or Cornet. Very small charges for lessons only expenses. We guarantee success or no charge. Complete outfit free. Write now. No obligations. Slingerland School of Music, Dept. 248, Chicago, Ill.

AGENTS: \$40 A WEEK

Wonderful New Hosiery Proposition

Guaranteed ONE YEAR Must wear 12 months or replaced free. Agents having wonderful success. H. W. Price sold 60 boxes in 12 hours. Mrs. Fields 109 pairs on one street. G. W. Noble made \$35 in one day. Sworn proof. Sold only through agents.

Not for sale in stores. A hosiery proposition that beats them all. Your territory still open. Write quick for terms and free samples.

THOMAS HOSEIERY COMPANY
170 Elk St. Dayton, Ohio

MORE FRUIT
from your trees if you keep them free from San Jose Scale, Aphis, White Fly, etc., by spraying with

GOOD'S CAUSTIC FISH OIL SOAP No. 3

Kills all tree pests without injury to tree. Fertilizes soil and aids healthy growth. **FREE**—Our valuable book on Tree and Plant Diseases. Write today.

JAMES GOOD, 2111-15 E. Susquehanna Ave., PHILA.

ACORN UNI-LITE

Turns night into day. 300 candle power. Carry as a lantern; use anywhere as a lamp. Weather proof. For house, barn, garage, camp and around the farm. Write for new free offer. Special opportunity to farmers, stockmen and motorists. Agents make big money. Write tonight for new 1918 offer.

ACORN BRASS MFG. CO., 303 Factory Bldg., Chicago

Don't Wear a Truss

BROOKS' APPLIANCE
the modern scientific invention, the wonderful new discovery that relieves rupture will be sent on trial. No obnoxious springs or pads. Has automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lies. Durable. Cheap. Sent on trial to prove it. Protected by U. S. patents. Catalogue and measure blanks mailed free. Send name and address today.

C. E. BROOKS, 219A State Street, Marshall, Mich

CLASSIFIED

Real Estate for Sale

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives and figs. Ideal for dairying, pigs and chickens. No cold weather; rich soil; low prices; easy terms; good roads, schools and churches. Enjoy life here. Newcomers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Industrial Commissioner, A. T. & S. F. Ry., 1967 Railway Exchange, Chicago.

FERTILE FARMS, BEAUTIFUL PERKIOMEN VALLEY, near Philadelphia. Catalog. W. Stevens, Perkasie, Pa.

CHAPIN'S FARM CATALOGUE POSTPAID
284 WASHINGTON ST., BOSTON

Poultry for Sale

90 VARS. ALL BREEDS POULTRY, eggs, ferrets, dogs, pigeons, hares, etc. List free. Colored descriptive 60-page book, 10c. J. A. Bergey, Box J, Telford, Pa.

Patents

YOUR IDEA WANTED. PATENT YOUR INVENTION. I'll help you market it. Send for 4 free books, list of patent buyers, hundreds of ideas wanted, etc. Advice free. Highest references. Patents advertised free. **RICHARD B. OWEN** Patent Lawyer, 60 Owen Bldg., Washington, D. C.

Help Wanted

WANTED IMMEDIATELY—MEN, WOMEN, 18 or over. U. S. Government positions. Hundreds clerical positions obtainable, \$90 month. Quick increase. Easy work. Write immediately for list positions. Franklin Institute, Dept. K-146, Rochester, N. Y.

Agents Wanted

WOULD \$150 MONTHLY AS GENERAL agent for \$150,000 corporation and a Ford auto of your own, introducing Stock and Poultry remedies, Dips, Disinfectants, Sanitary Products, interest you? Then address Royoleum Cooperative Mfg. Co., Dept. 59, Monticello, Ind.

WE PAY \$100 MONTHLY SALARY AND furnish rig and expenses to introduce guaranteed poultry and stock powders. Bigler Company, X-328, Springfield, Ill.

Salesmen

SALESMEN WANTED—THE DRAFT and enlistment took some of our best salesmen. This territory is now open and we would be pleased to hear from interested persons. Must be exempt from draft. Permanent. Fine opportunity for the right men. **SAGINAW MEDICINE CO.**, Desk D, Saginaw, Mich.

Home Weaving

LOOMS—ONLY \$8.50—BIG MONEY IN Weaving rugs, carpets, etc., from rags and waste material. Drop postal for free loom book. It tells all about weaving and our wonderful \$8.50 and other looms. Union Loom Works, 270 Factory St., Boonville, N. Y.

Plants for Sale

STRAWBERRY PLANTS—POSTAL will bring you complete and nicely pictured book. Tells all about my vigorous stock, grown best way. You will appreciate this book. Mayers Plant Nursery, Merrill, Mich. Bohemian nurseryman.

GREGG AND CUMBERLAND RASPBERRY plants, \$6.00 per thousand. S. H. Graybill, Richfield, Pa.

100 Progressive Pedigreed Everbearing Strawberries 50c. 200, \$1.50. Prepaid. Pedigreed Nursery Co., Solinas, Mo.

Flowers

DAHLIAS, 6 COLORS, 25c; 3 CACTUS Dahlias, 25c; Gladioli, 6 colors, 25c; Cannas, 3 colors, 25c; postpaid. Catalog. J. S. Griffing, Flemington, N. J.

"LIME-SULFUR" SOLUTION CONCENTRATES
Arsenate of Lead, Hydroxide, Scale Oil, Ground Sulfur, Power Sprayers, \$75.00.
ALLEN MFG. CO. Quakertown, N. J.

SILK WONDERFUL BARGAINS 4-Pound Bundles of beautiful Silk Remnants for fancy work, quilts, portieres, pillows, etc. SEND 10c for big package of large lovely pieces. Agents wanted to sell silk, velvet and other remnants. Union S. Works, 261 Factory St., Boonville, N. Y.

MONEY IN HONEY Easy Pay interesting work. Latest Methods of bee-keeping told in 24 page "Bee Primer." Send 25c for new 3 months subscription, primer, and bee catalogs to **AMERICAN BEE JOURNAL**, Box 11, Hamilton, Ill.

As low as \$13.15 **\$10,000.00**

SAW

Backs this Hertzler & Zoek Portable Wood Saw

This is the cheapest saw made. Only \$12.15 saw frame to which a ripping table can be added. Guaranteed 1 year, money refunded and all charges paid if not satisfactory. Write for catalog.

Hertzler & Zoek Co., Box 61 Belleville, Pa.

Kindly Mention American Fruit Grower when writing to Advertisers

IED

ale
 earns more
 ise the crops
 wheat, barley,
 lves and figs.
 chickens. No
 prices; easy
 and churches.
 ers welcome.
 Valley, also
 ing illustrated
 es, Industrial
 F. Ry., 1967

IFUL PER-
 elphia. Cata-
 Pa.

QUE POSTPAID
 ON ST., BOSTON

POULTRY,
 s, hares, etc.
 tive 60-page
 J, Telford, Pa.

NT YOUR IN-
 it. Send for 4
 undreds of ideas
 best references.
 RD B. OWEN
 ashington, D. C.

MEN, WOM-
 rnment posi-
 tions obtain-
 rease. Easy
 or list posi-
 Dept. K-146,

S GENERAL
 ation and a
 ducing Stock
 Disinfectants,
 you? Then
 ve Mfg. Co.,

LARY AND
 to introduce
 ck powders.
 gfield, Ill.

HE DRAFT
 of our best
 ow open and
 from inter-
 exempt from
 ortunity for
 MEDICINE

MONEY IN
 , from rags
 stal for free
 weaving and
 ther looms.
 ry St., Boon-

POSTAL
 d nicely pic-
 ny vigorous
 will appre-
 nt Nursery,
 seryman.

ND RASP-
 sand. S. H.

r Strawberries
 Co., Salina, Mo.

3 CACTUS
 colors, 25c;
 d. Catalog.
 J.

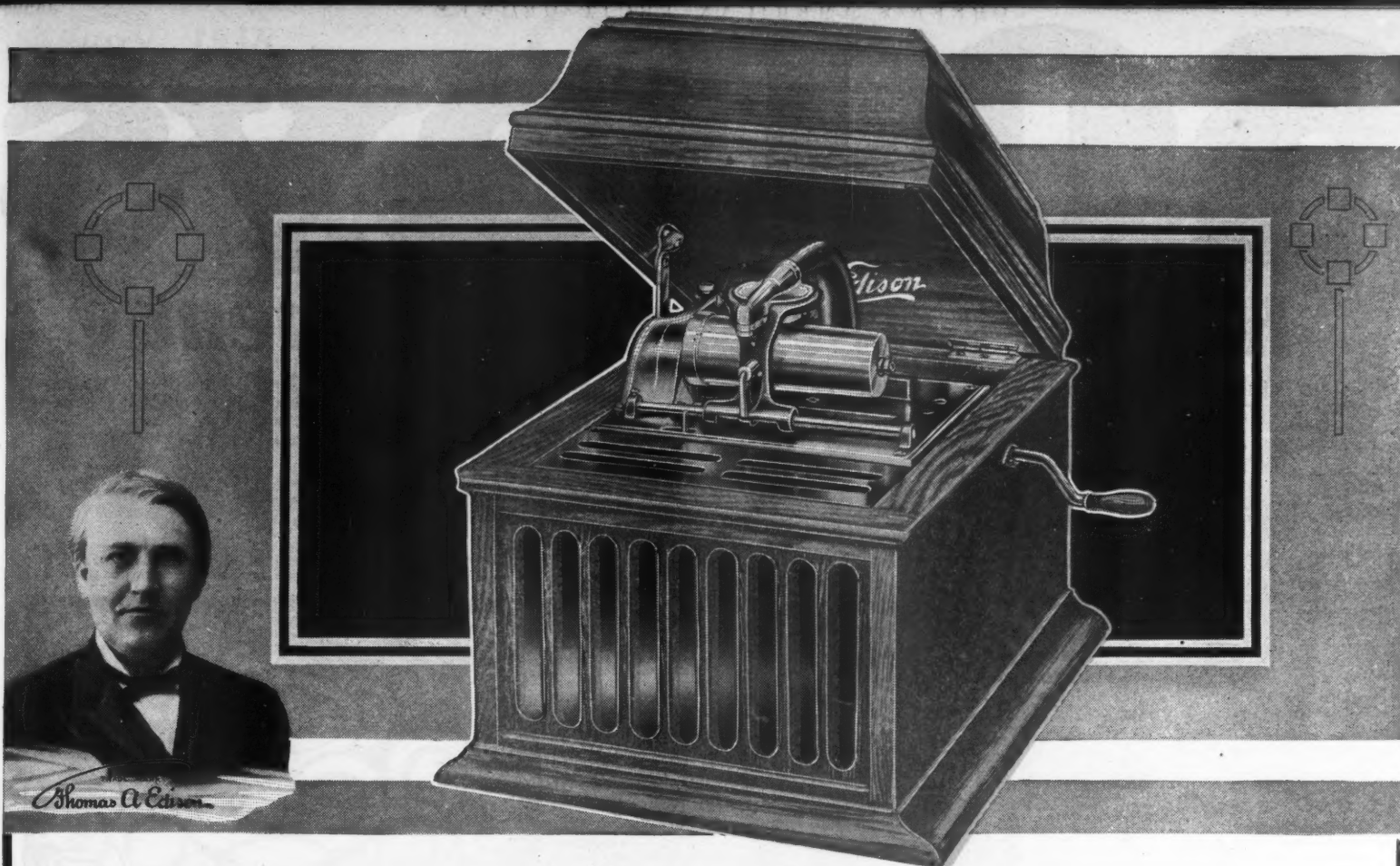
SOLUTION
 NCENTRATED
 ale Oil,
 875.00.
 akertown, N. J.

AINS 4-Pound
 Bundles
 for fancy work.
 to. SEND 10c for
 e wanted to sell
 S. Works, 251

Y Bees Pay
 Easy, in-
 ee-
 end 25c
 bee catalogs to
 Hamilton, Ill.

OO.OO
 is SAW
 Wood
 report saw made.
 frame to which
 can be added.
 rear, money re-
 gues paid if not
 ita for catalog.
 Belleville, Pa.

Grower when



Mr. Edison's Wonderful New Diamond Amberola Sent on Free Trial!

Read the Coupon Below! An astounding offer—the New Edison Diamond Amberola, Mr. Edison's great new phonograph with the new Diamond Stylus reproducer,

and 12 Brand New Blue Amberol Indestructible Four-Minute Records sent to you on **absolutely free trial**. Send no money—just fill out the coupon below and send it to us at once. We will send you the complete outfit immediately. No C.O.D. Entertain your family and friends with the latest song hits of the big cities. Laugh at the side-splitting minstrel shows. Hear anything from Grand Opera to Comic Vaudeville. Judge for yourself just how much this great phonograph would mean to your home. Decide if you can get along without it. After trial in your home, make up your mind. If you decide not to keep outfit, send it back **at our expense**.

Only \$1⁰⁰ After Trial

If you wish to keep Mr. Edison's superb new instrument after the free trial, send us only \$1.00. Pay the balance of \$41.20 for the complete outfit in easy payments of only \$3.50

for 11 months and \$2.70 for the 12th month, total, \$42.20. Remember, the 12 brand new Blue Amberol Indestructible four-minute records are included with this outfit.

Think of it—a \$1.00 payment, and a few dollars a month to get this outfit of Mr. Edison's new phonograph with the Diamond Stylus reproducer, the life-like music—the same Blue Amberol Records—all the musical results of the highest priced outfits. The *finest*, the *best* that money can buy at very much less than the price at which imitations of the Genuine New Edison Diamond Amberola are offered.

After years of labor on his favorite invention, Mr. Edison has made the music of the phonograph true to life. There is no reason now—especially since we make this rock-bottom offer—why you should be satisfied with anything less than Mr. Edison's genuine instrument. You are under no obligation on this free trial offer. Hear the New Edison Diamond Amberola in your own home before you decide.

Send No Money Just the Coupon!

Convince yourself first. Get the New Edison Diamond Amberola in your home on free trial. See what a wonderful instrument it is—how it brings the music of the world's greatest singers and players, the sweet old time melodies, the jokes of the funniest vaudeville actors, all right into your own parlor as if they were there in person. See for yourself how much you need the New Edison Diamond Amberola in your life. See how much happier it will make your home. Just fill out the coupon and send it in. No money down, no C.O.D. You pay us nothing unless you keep the outfit. Send it back, if you wish, **at our expense**. Or pay only \$1.00 after the trial, and \$3.50 a month for eleven months, and \$2.70 for the 12th month. Total \$42.20. The twelve New Blue Amberol Indestructible Four-Minute Records are part of the outfit. Send the coupon today.

F.K. Babson Edison Phonograph Distributors
 3471 Edison Block, Chicago, Ill.
 Canadian Office: 355 Portage Avenue, Winnipeg, Man.



No obligation to buy in sending this coupon; this is just an application for a Free Trial

F. K. BABSON, Edison Phonograph Dists., 3471 Edison Block, Chicago, Ill.

Dear Mr. Babson:—As per your offer, I should like to hear Mr. Edison's wonderful new style phonograph with the Diamond Stylus reproducer and the 12 Brand New Blue Amberol Indestructible Four-Minute Records which are included with this outfit, in my home on free trial. If I decide to keep the outfit, I will have the privilege of the rock-bottom price of \$42.20 direct from you on special terms. I merely agree to take the outfit promptly from the depot, pay the small express charges, and if I do not find it thoroughly satisfactory, I reserve the right to return the outfit at once at your expense. Otherwise, I will send the first payment of \$1.00 within forty-eight hours after the free trial or as soon as possible, in no case exceeding one week, and will make monthly payments thereafter of \$3.50 for 11 months and \$2.70 for the 12th month. Total, \$42.20. The outfit is to remain your property until the last payment has been made. The 12 New Blue Amberol Indestructible Four-Minute Records are included with the outfit. If I am not 21 years of age, I will have my parents or guardian fill out the coupon, as you do not ship to boys or girls under 21.

My name..... Address or R. F. D. No.....

City..... State..... Ship by..... Express.....

Shipping Point..... Ship by..... Occupation.....

Age..... Married or single..... If steadily employed at a salary please state.....

How long a resident in your neighborhood and your vicinity..... If there is any possibility of changing

your address during the next year, what will be your next address?.....

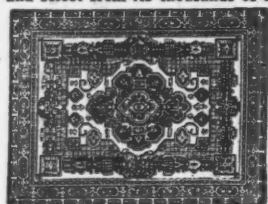
60 Days

Before First Small Payment

Here is the famous **Hartman Farm Credit Plan**. Send for anything shown here. Pay nothing now. Don't even decide whether to keep it or not until you have used it for 30 days. Let this test prove its value. Then if satisfied, send the first small payment 60 days after you receive the goods and pay the balance on our easy credit terms. If not satisfied, for any reason whatever, return the article and we will pay freight both ways. This offer is made by the House of Hartman and every statement made is backed by \$12,000,000 capital and a reputation of 60 years of fair dealing. Use your credit here.

Take a Year To Pay In 60 Day Equal Amounts

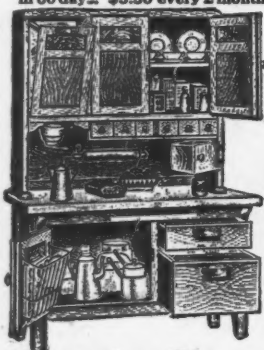
Spread your payment over twelve months. No need to take money from current expenses to buy your house furnishings and farm necessities. The Hartman Farm Credit Plan brings anything you want on these easy terms. If you don't see what you want in this advertisement, get our big Bargain Catalog and select from its thousands of special offerings. The coupon or a post card brings it free.



"Brantford" Brussels Rug

A Year to Pay

Superb Oriental medallion design. Tan, brown and green colorings. Woven with strong worsted face. Size 9x12 ft. Use it for 30 days. Return if not satisfactory. Order by No. 30RMA6. Price \$19.85. No money now. \$3.35 in 60 days. \$3.30 every 2 months.



Massive Rocker

A Year to Pay

A stunning bargain is offered in this great rocker. Frame is solid oak with beautifully embossed carving on front posts, back panel post and side wings. Golden finish. Upholstered in durable imitation Spanish leather. Nest ruffling in front seat. One of the most popular designs ever brought out. Thousands sold. Sent on our special offer of 30 days trial, no payment for 60 days and a year's credit free. The number of these rockers is limited owing to the big demand. So order at once to avoid disappointment. Shipped from Chicago warehouse. Shipping weight about 40 lbs. Order by No. 70RMA7. Price \$24.95. No money now. \$4c in 60 days. Balance in payments of 91c every two months.



Solid Oak Kitchen Cabinet A Year to Pay

Saves work in the kitchen. Has everything right at hand. Sent on 30 days' free trial. A sensational bargain. Solid oak. Has 40 lb. capacity flour bin with metal sifter. Spice drawers. 7 lb. capacity sugar bin. Rolling pin rack. Roomy china cupboard. 42 x 25 in. whitewood table top. Removable kneading board. Handy utensil cupboard with wire rack. Bread and cake box. Drawer bottoms of 3 ply lumber, will not warp or split. Base mounted on invisible slides. Moves easily and does not scratch floor. Height 65 in. Glossed golden oak finish. Shipped direct from factory in central Indiana.

Shipping weight 175 lbs. Order by No. 277RMA3. Price \$15.95. No money now. \$2.70 in 60 days. Balance in payments of \$2.65 every two months.

Hercules Guaranteed Roofing

A Year to Pay

All plys and weights—flint surfaced, mica surfaced, composite, marble surfaced, red rock surfaced, green rock surfaced. Absolutely uniform, rust-proof, water-proof, weather-proof. Ready to lay. Send first payment in 60 days. Balance in equal payments every two months apart.

Send for samples and prices of Hercules before you price a penny for Roofing. Coupon or post card brings them.

A Year to Pay on Rex-Kote Paints

Pay nothing for 60 days after arrival. Balance in equal payments 60 days apart. Guaranteed not to peel, crack, blister or chalk if used according to our directions.

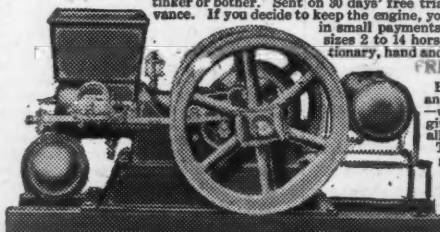
Free Color Cards. Also get prices and see how we can save you money on highest grade, dependable paints. Post card or coupon gets them.



The Majestic Engine

A Year to Pay

The simplest, most durable, most powerful for its H. P. rating and most economical-to-operate farm engine. A marvel of simplicity. Perfectly balanced—just the right weight for the power it is designed to develop. Has big improvements in all vital points. Convenient, compact. Gives long, lasting, efficient service without tinkering or bother. Sent on 30 days' free trial. No money in advance. If you decide to keep the engine, you take a year to pay in small payments every 60 days. All sizes 2 to 14 horse power. Made stationary, hand and horse portable.



FREE Engine Book

Before you decide on an engine, get this book—written by expert engine makers. It tells all about farm engines. Tells just what an engine ought to be and ought to do. Shows how you actually save on running expenses with the right kind of a farm engine.

We will send you without one cent in advance any size separator you want. Then keep it on 30 days' free trial. If you find it to be the closest skimmer—simplest and easiest to run—easiest to clean and perfect in every respect and the best separator bargain you ever heard of, then make first payment in sixty days and take a year to pay in small sixty day payments.

This is an opportunity to find out before you obligate yourself to spend a cent, just what the famous "Majestic" Separator will do. Farmers everywhere write of big increases in cream and butter after installing the "Majestic"—and you can prove it right on your own farm.

"E. H. Leigh, Iowa, says: 'We think the Majestic equal to all you say of it.' W. B. Wheelley, Pa., writes: 'Put in four milkings and got two pounds more butter than we got when we skimmed.' G. W. Ward, Vt., says: 'It skims fine.'"

FREE BOOK

Get the full description and prices on the Majestic. Let us explain its scientific construction and show why it is so efficient and economical. Get these facts first. Send now for our "Majestic" Separator Book and special offer. Learn how to make more money from your cows. The book is free. Send post card request or mail coupon for it today.



Capacity:
375 lbs.
500 lbs.
750 lbs.
1000 lbs.

THE HARTMAN CO.
4015 LaSalle St., Dept. 1182
Chicago, Illinois

Send me the merchandise marked X it being understood that I am to have the use of it for 30 days and if for any reason, I do not want to keep it I can return it at the end of that time and you will pay freight both ways. If I keep it I am to make first payment 60 days after arrival. Balance in 5 equal amounts every 60 days.

<input type="checkbox"/> 49-Piece Dinner Set. No. 321RMA20.	<input type="checkbox"/> Kitchen Cabinet. No. 277RMA3.	<input type="checkbox"/> Rocker. No. 70RMA7.
<input type="checkbox"/> Aluminum Set. No. 415RMA14.	<input type="checkbox"/> Brussels Rug. No. 30RMA6.	<input type="checkbox"/> Engine Catalog.
<input type="checkbox"/> 602-page Catalog.	<input type="checkbox"/> Paint and Roofing Book and Samples.	

Send for 502 Page Bargain Catalog

We believe we are justified in saying that the new Hartman Catalog is the finest ever published. It contains more than 500 pages. You should see this catalog, with its hundreds of pages showing carpets, rugs, dishes, furniture, etc. in most beautiful color work. Superb bargains in everything in Furniture, Stoves, Silverware, Jewelry, Clocks, Watches, Curtains, Talking Machines, Sewing Machines, Kitchen Cabinets, Ice Boxes, Kitchen Utensils, Washing Machines, Baby Carriages, Carpets, Rugs, Vacuum Cleaners, Dishes—everything needed in the home—and all on the easiest Credit Terms. Send for it now and select from its thousands of bargains. It is free.

The Hartman Co., 4015 LaSalle St., Dept. 1182, Chicago

Name.....

Address.....

Nearest Shipping Point.....
If you do not wish to order direct from the ad and only wish the 502-page Free Catalog, simply write your name and address above or send post card request.